SEPTEMBER, 1960 40 Cents

DESERT

. . . magazine of the

OUTDOOR SOUTHWEST



"THE GHOST TOWN" BY CLYDE FORSYTHE (See page 2)

THE SHAPE OF THE S

The Gold Rush

June cover



The Mining Camp

July cover



The Mining Town

August cover



The Ghost Town

This month's cover

ON THIS MONTH'S COVER:

THE GHOST TOWN

THE CONCLUDING PAINTING IN THE FAMOUS "GOLD STRIKE" SERIES BY THE DISTINGUISHED WESTERN ARTIST

CLYDE FORSYTHE

When the gold is gone the Mining Town loses its reason for existing. It's a simple lesson in economics that has dotted the West with abandoned or nearly-abandoned settlements — Ghost Towns. The roster is a long one: American Canyon, Atwood, Aurora, Aurum, Bannock and so on down the alphabet.

In the following story, Clyde Forsythe relates how he brought his Gold Strike saga to a logical conclusion with the painting of The Ghost Town.

MOW CAN WE anticipate what may result from a chance meeting at the roadside with a total stranger? My short chat with the shabby little prospector at the gas station at Las Vegas in 1926 was the motivation for the painting of these four pictures, each 38 x 48 inches in size.

In the beginning there was to have been but one painting— "The Gold Rush"—but as I have already said, that first one demanded another—"The Mining Camp"—which, in turn, led to the creation of "The Mining Town." I then thought that the series was complete. But work lay ahead; 1940 had come and gone.

Back in 1930, my old-time studio-mate, Norman Rockwell, had come with us from New York to work with me in my Southern California studio. Our friend, Bill Backer, New York hotel owner, also came along. It was his first trip to the Wild West. To give the boys a look at something typical of the old days that had once been "wild," I outfitted them in Western garb, and transported them to our cabin at Big Bear Lake in my latest Franklin. From there we paid a visit to "Lucky" Baldwin's famous abandoned gold mine above Baldwin Lake.

The old mill and stamps were still there, and ore-cars were on the tracks. Vandals had been at work and the ghost town of "Doble" at the foot of the mountain was about depleted.

From there we rolled down the Cushenberry grade, past "Deadman's Point" to Victorville and thence north along the power-line road to old Randsburg.

We put up at the Atlas Hotel, the upper hallway of which sagged at least six inches in the middle. (It has completely sagged now—burned to the ground.) After a good dinner at one of the cafes, I wanted to get my friends into the Yellow Aster Mine, which was being worked by leasers. In the window of the main saloon were the usual piles of ore samples. This was the place to begin.

I led the way to the ore samples and we examined them with great interest. Here my usual good luck asserted itself. Soon a tall man arose from a bottle and a poker game in the rear, and offered to be of service to the fairly well-dressed strangers in town. We could be potential investors! The man turned out to be Kent Knowlton, publisher of the weekly paper, a fellow newspaperman. And we had a New York hotel owner as well as a noted Saturday Evening Post artist in our party—at first sight, good prospects.

Yes, Mr. Knowlton was an old friend of Death Valley Scotty. Yes, he would be very glad to arrange to get us into

continued on page 42

POEM OF THE MONTH

QUIETUDE

By GRACE R. BALLARD Santa Barbara, California

A horned toad sunning on a rock

Appears inanimate
As lichens on grey stone —
Until a careless fly
With small concern
Comes buzzing by.

A flash of flaming tongue snaps out —

A sudden gulp—brief interlude;

And once more

Grey of toad and rock dissolve

In desert quietude.

Desert Magazine pays \$5 each month for the poem chosen by the judges to appear in the magazine. To enter this contest simply mail your typewritten poem (must be on a desert subject) to Poetry Contest, Desert Magazine, Palm Desert, Calif, Please include a stamped return envelope.



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Volume 23



Number

-- magazine of the Outdoor Southwest --

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LETTERS FROM OUR READERS...

A Dog Native to the Desert . . .

To the Editor: May I suggest to Norman Riggle, the man who asked for information on the best type of dog to have on the desert (July "Letters"), that he obtain a Saluki

For the past 13 years my family and I have been in Arabia working for the Arabian American Oil Co. It has been our hobby to raise Saluki dogs—a most excellent type of canine and one perfectly suited to the desert. The breeding of the Saluki dog dates back to 6000 B.C. It is a native of the Arabian desert, and these animals love plenty of space in which to run. Salukis make wonderful pets.

The number one breeder of Saluki dogs in the States is Mrs. Esther Bliss Knapp of Pine Paddocks, Valley City, Ohio. Mrs. Knapp is president of the American Saluki Club and I'm sure she can supply further information on this dog.

> CARL M. RODARTY Ras Tanura, Saudi Arabia

Last of the Basket Makers . . .

To the Editor: I read with interest the story, "Last of the Basket Weavers", by Sam Hicks (August). We are very much interested in Indian lore, and visit often with our friends in Pala, Calif.

Not very long ago we went to see Mrs. Madelina Castillo and she gave us each a pine needle basket which she had made. Mrs. Castillo is one of the few basket weavers left in Pala, but she would rather make tamales to sell—which is a great pity. Her baskets, both the pine-needle and conventional, are lovely.

Mrs. Racinda Nalasquez is another fine basket weaver in Pala, but we don't know whether she weaves with pine needles or not.

> DOROTHY McKENNA Solana Beach, Calif.

See California First . . .

To the Editor: Did your California Travel Correspondent fail to make the deadline, or did you become so fascinated with the seven pages of material on adobe mud and basket weaving in the August issue that you just plumb forgot that you have a large and faithful audience in Southern California which depends on you to lead us by the hand every month for a weekend ramble in the family jalopy to desert or mountain?

Adobe bricks and basket weaving are fine. So are outdoor recreation and travel. A magazine of the Outdoor Southwest might have a bit more of the latter and somewhat less of the former.

COL. R. A. GARDNER Beverly Hills, Calif.

(California travel columns were not scheduled during the summer months, but we'll have one next month. See in this issue the story on Thousand Palms Oasis and Colorado Desert gem fields.—Ed.)

Payed Roads Mean Trouble . . .

To the Editor: Your August issue received today and I, as usual, enjoyed every bit of it. However, the article on Canyon de Chelly by Thomas Lesure could do with some corrections.

First—the road into the Canyon is now oiled. From the fork west of Ganado, a new oiled road leads right to the Ranger Station at the Canyon.

Secondly, the monolith (Face Rock) across the canyon from Spider Rock is known by the Navajos as "Speaking Rock."

The state of Arizona is doing a lot of road work in the Four Corners country, I'm sorry to report. Before long there will be no more real desert country left. The road from Window Rock to Tuba City is completely oiled now, and work is underway on the paving of the road from Chinlee to Tuba City via Pinyon. That will ruin still another stretch of desert.

Although maps do not show it, the main Monument Valley road is oiled from Kayenta to the Utah line and beyond. There is a 40-mile stretch from Kayenta south to Cow Springs which is still unpaved—but it is only a question of time.

It will not be long before the Painted Desert and all the great canyon country of Southern Utah and Northern Arizona will be infested with tourists, flat-landers, beer cans and rubbish. Nothing in the world will ruin a wilderness area like building oiled roads into it.

MILES T. RADER Denver, Colorado

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SOUTHWEST NEWS BRIEFS

A new scenic route to the South Rim of Grand Canvon has been opened by the Ari-New Route to zona Highway De-partment—and Flag-South Rim staff is now stealing some of the 'Gateway to Grand Canyon" thunder hitherto the property of the Williams and Cameron chambers of commerce. The new state route-Arizona 164 - leads from Flagstaff northwest along the foothills of the San Francisco Peaks through the thick pines of Coconino National Forest. The highway connects with the Grand Canyon to Williams link at Valle Airport. For Highway 66 travelers from the East bound for the South Rim, the new highway will save about nine miles.

Plans for freeway construction call for the elimination or alteration of substantial parts of Mine Town historic Nevada City, Doomed California, one of the West's most famous mining towns. Nevada City was a center of hydraulic mining, as well as one of the richest hard rock gold producers in the Mother Lode country. One of the buildings scheduled to yield to the demands of progress is Ott's Assay Office where the silver of Virginia City was first recognized, triggering the rush of '59 to the Comstock Lode.

¶ Jay George Ransom, 76, noted California rock collector and gemologist, passed away Hobby Pioneer in late July in Los Passes Angeles. He had been in ill health for several years. Ransom was active in the promotion of Southern California gem shows since 1942; and was featured in many Desert Magazine gem-mineral field trip stories written by his son, Jay, Jr.

The Forest Service's living firefighting symbol, Smokey the Bear May Move mate. Smokey, who became a national hero a decade ago when as a badly singed cub he survived a New Mexico forest fire, daily receives about a thousand pieces of fan mail. The great majority of these letters are written by children who believe the black bear wears a ranger's outfit and carries a shovel. Actually Smokey has lived in a barred cage at the National Zoo in Washington, D.C., for the past several years. To keep faith — at least in part — with Smokey's wee helpers, there is a movement underway to raise \$35,-000 with which to construct for Smokey a moat-surrounded home resembling a forest ranger station. including two log cabins and a flying flag. Mrs. Smokey would live in one of the cabins.

A huge red limestone natural arch. thought to be previously undiscovered, was found by a U. S. Geological New Arch Discovered Survey team deep within the Grand Canyon of Arizona. The discoverers estimate the bridge curves up 800 to 1000 feet above the bed of the Colorado River, spanning Fern Glen Canyon, one of the many gorges jutting off the main canyon. Fern Glen is about eight miles below Havasu Canyon. The new arch, a half-mile from the river, is obscured from the view of riverrunners. The discovery resulted from a navigational slip-up. The 12-man party had planned to spend a night at a landing above Havasu, but the current swept them 11 miles past their destination to Fern Glen.

Award of a \$78,643 contract for development and rehabilitation of approximately 500 Isolated acres on the Duck Tribe Aided Valley Indian Reservation on the Nevada-Idaho boundary was announced by the Department of the Interior. The contractor will level the land and construct canals, laterals, and water control structures for irrigation purposes. This is part of an overall program to develop available resources on the Duck Valley Reservation for use by Indian families.

(Desert, May '59) is in line to receive a new home - and a



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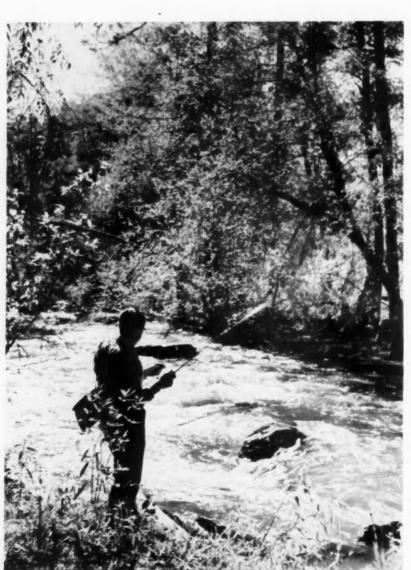
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WHITE MOUNTAIN APACHES Juvite You

Here's the story of cool, clean, uncrowded Apacheland, whose magnificent million acres in eastcentral Arizona are now at the disposal of Southwest campers, thanks to the Tribal Council's enlightened policy on tourism.

By H. N. FERGUSON



AST FRONTIERS are scarce these days, and getting scarcer. As our wide-open spaces continue to dwindle, the crowded conditions in National Parks and at most well-known scenic spots are influencing many families to take a fling at camping in the nation's less frequented areas.

Heading the list of likely locations with plenty of elbow room for a memorable summer vacation is a Southwestern camping region which will delight any family: Apacheland — the storied Indian Territory of frontier history — the real uncommercialized article.

The White Mountain Apaches, whose ancestors turned the entire Southwest upside down with their bloody raids, are opening up their vast reservation to pale-face visitors. They are inviting white families to camp in their mountain fastness, which contains some of the most breathtaking scenery in the United States.

The area occupies 2600 square miles in eastern Arizona about midway, on a straight line, between Phoenix and Albuquerque. Climate and topography of the reservation ranges from semidesert to sub-alpine, with elevations from 2700 feet above-sea-level on lower Salt River to over 11,000 feet on Mt. Baldy, located on the eastern reservation boundary where deep snow banks often remain the year-round. Along 300 miles of rivers and streams and on the shores of their two dozen lakes, the Indians have built some 650 campsites complete with plank tables and benches, fireplaces and sanitary facilities; they're even providing firewood - and there is no charge for

MORE THAN 300 MILES OF WELL-STOCKED TROUT STREAMS LURE ANGLERS TO APACHE RESERVATION

camping! At some spots the Apaches have erected log cabins which they rent to sportsmen who want to fish the finest trout streams in Arizona or hunt elk, bear, javelina and wildfowl.

Apache fees for hunting and fishing privileges are very reasonable: fishing —60c for the first day, 30c a day thereafter; hunting permits vary from \$2 to \$15, depending on the game. The Tribal Council uses all such fees to improve reservation facilities for visitors

For those who want to view one of the largest unspoiled beauty spots in North America without roughing it, the Apaches have constructed a luxurious motel at Indian Pine Junction where Highways 73 and 173 converge. It is called Hon-Dah, which is Apache for "Be My Guest." Everywhere the tribesmen are making sure that their forests are safe for campers. Indianbuilt trails and recreation roads lead in all directions, with hundreds of directional signs erected for the traveler's convenience. Copper-skinned braves, traveling in four-wheel-drive vehicles, are constantly on the alert to give firstaid or to repair broken-down autos. Trained young Apache game wardens patrol the length and breadth of the reservation to direct and assist visitors and sportsmen,

"Bring your kids," invite the red men. "We'll show little paleface braves how to hunt and fish the Indian way."

For the traveler who has been driving through the sign-spattered world of snake farms, "trading posts," gila monster exhibits and giant malts, it is a welcome respite to enter the beautiful high country of Apacheland. You pass by authentic and functional Apache wickiups and brush-houses clustered around windmills pumping the precious water which means life for these cattlemen-farmers. You probably will be amazed as I was to see herds of sleek Hereford cattle, vast peach orchards and expansive logging operations here - literally in the middle of nowhere. These enterprises-plus tourism-are helping to raise the Indians' standard of living.

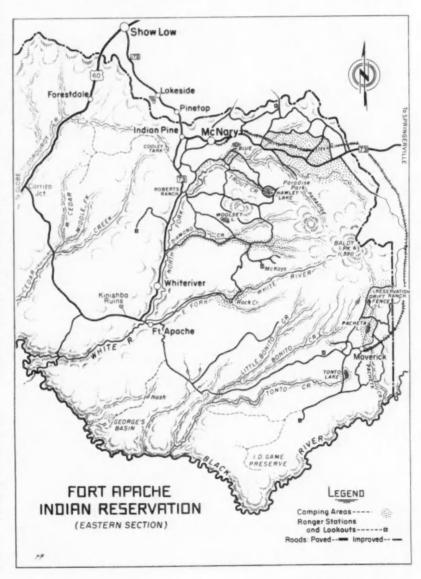
True, you can see cattle, peaches and lumber trucks almost any place, but here you are also likely to see a herd of wild horses galloping through a spectacular valley far below. And suddenly the realization comes that this is a lush other-world oasis in the unspoiled loneliness of sweeping desert and tumbled mountains. Its people add to this feeling that here is something special.

Lydo Harvey, 34, is chief of the tribal wardens. He is a quiet-spoken and well-mannered full-blood Apache

Indian, and has served as a warden for more than eight years. His grandfather, Baha Alchesay, was the last of the hereditary Tribal Chieftains. Lydo's natural abilities as a tracker, his vast knowledge of the remote areas, and his other outstanding qualifications have gained him high respect from Indians and whites alike. He recently spent many hours tracking a lost woman and boy in the roadless Baldy area, and brought them out safe and sound. To Lydo, this is all in a day's work.

Lou Evanoff, his wife Marge, and six young Apache attendants welcome the guests at Hon-Dah and see to their every need when they stay in the widely-spaced modern cabins. Billy Kane, another Apache, operates a complete grocery store, garage, tackle store and trailer park across the highway at Apache Indian Pine. Cliff and Lorraine Jones, with the help of a crew of competent Indians, operate the Tribe's newest and most extensive resort area at Hawley Lake. A Laguna Indian, Andy Kayona, works harmoniously with his Apache helpers in the operation of a modern service station and curio store at Carrizo Junction.

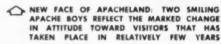
It is interesting to hear the traditional Apache names such as Baha, Cosay, Altaha and Kessay and then meet full-blood Apaches named Riley, Johnson and Harvey. These latter names were adopted from early day troopers stationed at Fort Apache and others who won the respect of the various clans. But, whether it be Baha or Riley, these people are worth knowing — they are the added spice that





makes these mountains a never-to-beforgotten vacation site.

Nelson Lupe, former chairman of the Tribal Council and present head of the Recreation Board, is credited with doing most of the spade work in convincing the Indians that the recreation development program would be a wise move for the Apaches. Jim Sparks, general manager of the White Mountain Recreation Enterprise, is a former state president of the Arizona Game Protective Association and has long been active in recreational resource development and other conservation programs. Jim is one of the



brightest stars in Arizona's outdoor recreation picture.

Whiteriver, south from McNary on State Highway 73, is the agency town, trading center and hub of the Fort Apache Reservation. It is worthy of a visit just to get a new perspective on this vigorous tribe. The name that once struck terror into the hearts of the white man now stands for fine cattle and good conservation practices in grazing and forest lands. It is a balm to the conscience to learn that these Indians, from whom we took some of nature's loveliest forest and hunting and fishing country, receive something for every tree cut and for every fish or animal now hunted on their property. Having adapted the hard way to their conquerors, the Apaches are definitely not among the 'vanishing" peoples.

There are many ruins and historical points to be visited on the reservation. Kinishba, "The Brown House of Long Ago," is a must on the itinerary. Located eight miles southwest of Whiteriver, this prehistoric ruin has been deftly resurrected by Dr. Byron Cummings, "Dean of the Southwest." Dr. Cummings has determined that Kinishba was occupied from 1050 to 1350 A.D.

At the juncture of the East and

APACHE HOSTS HAVE PROVIDED MORE THAN 650 WELL-EQUIPPED CAMPING SITES FOR THEIR GUESTS — AT NO CHARGE



8 / Desert Magazine / September, 1960

North forks of the White River stands Fort Apache, the first military fort established on the reservation. In its day the Fort was a large cavalry and infantry post. General Crook's log cabin home remains intact. The entire officers' row is still in use as is the old Post Headquarters—but not by the military. The parade ground where troopers once carried on "monkey drill" is now a football field for the Theodore Roosevelt Boarding School, whose pupils occupy the old fort.

I had fun tracing a vestige of the old telegraph line that was once strung on iron posts from the railhead at Holbrook to Fort Bowie. You can also see remains of the military road which connected Fort Apache and Fort Thomas; the deep ruts cut in solid rock at the Black River crossing have withstood the ravages of time, and speak eloquent testimonial to the Army's hard role in taming this remote and rugged wilderness.

Every member of the family can find something of interest in Apacheland. As part of their holiday, children get a glimpse into a different world and painlessly spend some hours in "school" without even realizing they are receiving valuable on-the-spot lessons in history. They will get a special treat out of a trip on the Apache Railroad, which provides excursion rides

from Maverick to McNary with a chance to view the huge logging operations on the reservation.

Primary function of the 60-milelong Apache Railroad is to haul logs from the high country to the hungry mill at McNary. The line is owned and operated by the Southwest Lumber Company, and there are no schedules as such. However, passage on the train can be arranged by contacting the Lumber Company offices in Mc-Nary.

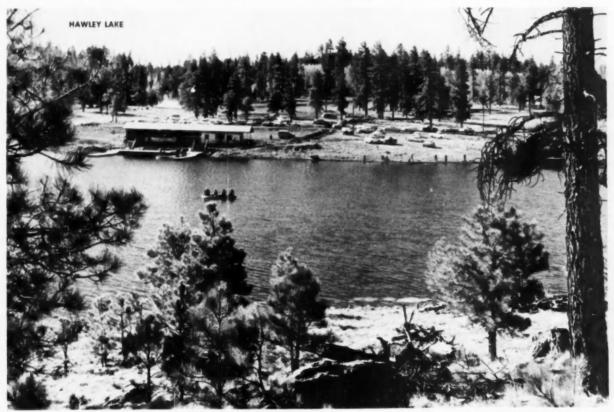
Once each fall (Labor Day) the logs are forgotten and the open cars are fitted with seats and benches to afford an open-air platform for the visitors who take this special trip. A fee of approximately \$5 pays for hours of enjoyment on the ride where each curve in the rails opens up a new vista of breathtaking beauty. Wild turkey, antelope, deer, elk and many other forms of wildlife are frequently seen on the trip. The train stops at midday for a delicious lunch prepared under the tall pines.

Outdoor recreation opportunities on the reservation are virtually unlimited. Hunting, fishing, hiking, horseback riding, swimming, golf and tennis are popular pastimes for the visitor. A movie is shown once a week at Agency Headquarters. Telephone service at Whiteriver and Fort Apache is available during the daytime — and such limited service can be a blessing to those with jangled nerves.

You will be doing yourself an injustice if you institute a rigidly planned program of sightseeing. There should be a minimum of regimentation, for at any turn in the trail you may have the eminently satisfying experience of watching a beaver at work, a turkey hen instructing her young, or be fascinated by the play of sunlight on a wayside pool. Any one of experiences such as these may delay you for an hour or a week, and thus throw any tightly-knit schedule out of kelter.

Every road, whether paved or improved, is an invitation to adventure, to peace, to air laced with forest fragrance.

Your visit will be more memorable if you study your map just enough to arrive at the reservation. Then let dips of the terrain, the shape and color of flowers, the glint of sunlight on a briefly revealed trout order the way of your going. All 1,664,872 acres of peaks and valleys, spreads of lengthy meadow, every little town and nestled lodge extends an invitation to enjoy for a few days an exciting way of life which is fast becoming foreign to most Americans.



THE WESTERN RED-TAILED HAWK

By EDMUND C. JAEGER, D.Sc.

author of "Desert Wildflowers," "The California Deserts," "Our Desert Neighbors," "The North American Deserts"

MONG THE MOST common of the large birds of prey winging their way or soaring in the desert's skies of blue, is the western red-tailed hawk (Buteo borealis calurus), perhaps more properly called a buzzard since technically it is not a true hawk. This bird is one of the finest of the Buteos (pronounced BOO-te-ohs). I like that rich sounding name as applied to this hawk for it seems to emphasize its size and dignity. Buteo is the Latin's name for one of the kind of hawks they well knew. To this genus belong at least 11 North American species of hawks and several Old World kinds, including the distinctive Buteo desertorum of Arabia.

Western red-tails may seem unusually obvious on deserts because of their habit of sitting for long periods in conspicuous places in a land of few close-set trees.

The broad wings, the wide fan-shaped tail rounded on the end, and the rufousred of the entire top of the tail of adult birds are the chief distinguishing marks; but, unfortunately the tail color is generally seen only when the bird slightly turns over as it changes its course while soaring. Swainson's hawk, sometimes confused with the redtail because it is about the same size, has a tail which is gray above and in the normal adult there is a broad reddish-brown chestband. The similar-sized marsh hawk has a conspicuous white patch on the rump and has distinctive bars on the underside of the tail. Watching the tail markings thus becomes an observation early to be made when one wishes to identify large hawks of the

During the spring of 1930, while exploring a region of unusually large granite rocks, I spied high on a shelving ledge an exceedingly large nest made of creosote bush branches. It was at least five-feet broad by two-feet high. Almost every year since I have returned to this site, and have found that this nest has been occupied by a pair of nesting eagles or red-tails. Each pair of birds has added a few sticks until now the nest is one of the largest and bulkiest of which I can find record. Last May I noticed, as I rather expected, an ornament of new green twigs about the upper rim of the nest structure; I knew immediately that it was staked out for use. Patiently watching, I finally saw one of the builders come in with a green-leafed branchlet and lay it on the edge of the nest. This red-tail was so dark that I almost took it to be a raven. One of the lads who was with me thought it would be easy to climb up to the aerie and see if there were eggs, but without ropes to enable him to descend from above, he found it wholly

impossible to get to a position where he could peer into the nest. The site had indeed been wisely chosen.

When some weeks later we saw the red-tail female at the nest, and witnessed her body repeatedly rising and lowering as on a pivot, we felt certain that she was feeding her young and that her motions indicated that she was tearing up food, perhaps a rabbit or a snake, for her young.

She was so intent in her duties that although we approached to within 100 feet, she never noticed us. Luckily for her we were only observant friends and not gunmen looking for an easy target.

At another time when we saw the female red-tail soar toward the nest, her sharp eyes spied us, and, wary bird that she was, she hastily departed, probably to some high point where she could watch us undetected. We waited in vain for her return.

Another substantial red-tail nest I have often visited is embraced by four upward-pointing arms at the top of the tallest-stemmed tree-yucca I have ever seen on all of my many Mojave Desert travels. This nest, at least 25 feet from the ground and perhaps 25 or more years old, has been occupied, as far as I know, alternately through the years by nesting ravens, western horned owls and red-tailed hawks.

Sometimes the red-tails build in the desert's tall ironwood trees, at the top of dead palms and even high up in the embrace of thorny ocotillo stems. Willow and cottonwood trees along the desert's few streams are also utilized as nesting sites. In Arizona and northern Sonora I see this bird's bulky nests mounted among closely set terminal branches of saguaros and organ-pipe cacti, and in Baja California in branching cirios and cardons, every one in a place well calculated to foil

the most inquisitive climber. Twice, years ago,

I came upon the beginning of red-tail nests at or near the top of towers carrying electric power lines. Power line inspectors, realizing the menace of hawks in causing shortages on the lines, discourage the birds by early tearing down the nests.

One of the thrills of the bird-watcher is to see one of these adept flying raptores high in the air carrying a large violently-twisting snake trying desperately to free itself from the grip of the bird's strong talons. Under these circumstances the flight, while artful is "heavy," slow and often difficult, but the bird is equal to its task and I doubt if the snake's best efforts to free itself are ever successful.

A red-tail which I saw flying above a dry lake in southern Nevada was carrying a snake (probably a gopher snake) which was at least five feet long, yet the bird was able to mount to heights where it was almost out of sight. Indeed, my eight-power binoculars were needed to trace

the red-tail's course. When last I saw it, the hawk must have been at least a third of a mile above me and drifting to the east. It was a hot summer morning and the strong up-draft above the glaring salt- and clay-crusted playa probably aided considerably in bearing the bird aloft. Merriam Bailey in her Birds of New Mexico quotes a Mr. Jensen who gave this graphic description of a red-tail capturing a rattlesnake: "A few miles west of Santa Fe, the road follows for several miles the bottom of a narrow valley fringed with rimrocks on the south side Scanning the rocks through my field glasses I discovered a male red-tail sitting on a crag. While I was watching the bird, it suddenly dropped down to the base of the cliff, and I could see a fierce struggle taking place. I was not near enough to see what actually happened, but I could often see the wings of the hawk raised above the intervening low sagebrush and judge that the bird was continually changing position. I hurried as fast as I could towards the spot, and when I was about 50 feet away, the hawk took flight carrying in its talons a mediumsized rattlesnake."

A ground squirrel I once saw was surprised while sitting on the top of a bladder-pod bush which he was using as a lookout post. The hawk came down upon it almost with the speed of an arrow, striking the ground squirrel on the head. The rodent fell straightway to the ground. The bird flew up, then descended, gave a cutting blow to the squirrel with its beak, and straightway carried it off in the tight grasp of its talons. It was, I daresay, a time of tense moments for the hungry hawk, but I do not think the squirrel ever knew what happenedit was a knock-out blow all too quick for reaction on the part of the victim.

The male red-tail is considerably smaller than his mate, 20 inches being an average length while the heavier female may measure up to 25 inches. Mating takes place early in the season. After the nest has been readied, the eggs, generally two, sometimes three or four in number, are laid. The shell is a dreary dull-white with sometimes a few markings of dull grayish-brown, or with extensive blotches of several shades of darker brown. The incubation period is about four weeks. Both sexes engage in seeing to it that the eggs are kept warm; furthermore they share in the care and feeding of the young which stay in the nest nearly

I once found a nest with newlyhatched young situated on a shelf of a clay-and-conglomerate cliff of a box canyon. The site was such that I could look down across the gorge right into the nest. Well I could see the activities of the nestlings. At first the hawklets were covered with a long buffy to grayish-brown soft silk down about a half-inch long. After 18 days I could see with aid of my field glasses that quills were beginning to appear on the chicks; next came the large tail feathers; and by the end of four weeks my young friends were nearly full feathered, full grown and ready to leave the nest. They were always a clamorous lot, incessantly making a series of weak squeaky or peeping notes, markedly louder when the parent birds approached with food. At such a time there was much stretching of necks and raising of heads. When one of the young birds died (perhaps of starvation or injury) it was promptly thrown from the nest.

When out on their venatic exploits, red-tails often soar in circles or slowly flap in almost straight lines at considerable heights. Their eyesight is ex-ceedingly keen, enabling them to detect from lofty positions moving objects as small as a mouse. Once the intended prey has been spotted and ventures too far from adequate shelter, the bird plunges close-winged with great speed and directness to pick up its quarry. At other times while hunting it sails low to the ground, slowly scrutinizing the brush for any moving object. Or it may merely sit on some high point of vantage such as a rock pinnacle, tall saguaro or ironwood tree, seemingly taking little interest in the surroundings but in actuality scanning the ground with keen interest. From such a perch it can quickly descend on any creature it may see.

During the nesting season the birds engage in marvelous flight maneuvers, often soaring in great circles while crossing and recrossing each other's paths; sometimes they seem almost to touch one another. Higher and higher they go until they are almost out-of-sight. At times at these dizzy heights they half-close their wings and make daring dives, checking their bullet-like speed only when within a few feet of the ground.

Most small birds and even most of the larger ones, show complete indifference to the presence of red-tails. I have seen birds as small as fly-catchers bravely mob one of these hawks and fly menacingly about it; the indifferent old hawk completely ignoring their earnest anger. If occasionally small birds are taken, it is because of ex-

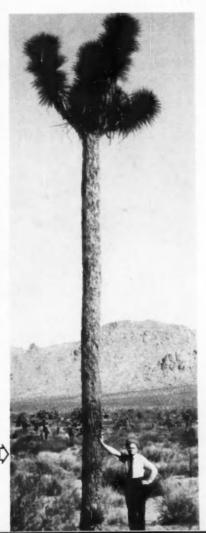
THE AUTHOR STANDS NEXT TO A TALL-STEMMED TREE YUCCA WHICH CONTAINS IN EMBRACE OF ITS BRANCHES A RED-TAILED HAWK'S NEST

treme pressure for food during the time of rearing the ever-hungry young.

It is believed that ground squirrels form, when possible, a very substantial, if not the main portion of the red-tail's diet. They are among the most common diurnally - active rodents, almost always plentiful. Red-tails are indeed "veritable factories" for the destruction of rodents; they have been known to kill as many as six large ground squirrels in a day. If there is any large population of ground squirrels in any area it probably means that most of the coyotes and hawks have been killed by ranchers and hunters who find the large birds a fairly easy target. California legislators wisely placed all hawks and owls on the protected list of birds. No longer do they brigade the large hawks under the opprobrious name of "chicken-hawks."

If taken young before fully feathered, most hawks make interesting instructive pets. The younger they are procured the better. When well able to fend for themselves, they should be turned loose to enjoy their freedom.

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A LITTLE GIRL'S BIG WISH

By ED ELLINGER

Cleis O'Bryne Coburn is 10. She lives in Sedona, Arizona. Ever since she was four or maybe three-and-a-half she has had but one dream-to own a horse of her own. Her dad, Bill Coburn had made her a promise, redeemable on her 10th birthday - or shortly thereafter. You can guess what it was. ☐ Well anyway, to make a long waiting period short—the final day arrived. To Bill it seemed like no time at all; to Cleis, an eternity. But Bill made the promise in good faith and off they went horse shopping in Scottsdale, just north of Phoenix. They answered ads and covered many a stable and pasture, but somehow nothing quite did the trick. They saw some pretty nice horses, but Cleis had some definite ideas of what she wanted. On the third day it happened—Cleis had her first glimpse of Flaxen Yasha, a four-year-old three-quarter bred Arabian mare. It was love at first sight, but there was a fly in the ointment, a big nasty one-the price. Besides her perfect conformation, Yasha was sired by Skorage, a famous Arabian owned by the Brusally Ranch. One doesn't get a horse like Yasha with green stamps.

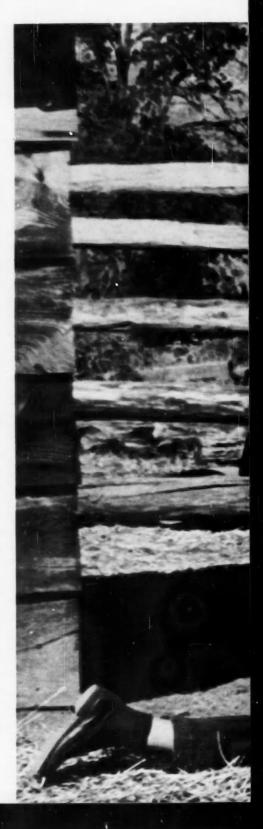
The Coburns, father and daughter, beat an unhappy retreat to Sedona. Cleis was heartbroken and Bill watched her out of the corner of his eye. She would go out to the corral to feed the old horses she had learned to ride on, but somehow her heart wasn't in it. Although Cleis said little, heart-strings can play sad melodies which a sensitive father cannot withstand.

Bill made the necessary phone call and Yasha was soon on her way to Sedona.

Since Yasha's arrival on the scene Cleis has thought of little else. Fortunately her grades have not suffered. She still plays her accordion, but with subdued enthusiasm. Yasha is the focal point of her small world. Shortly after dawn Cleis is up, dressed and out in the corral, pockets stuffed with carrots. Yasha follows her little mistress around like a puppy dog. Cleis takes care of all the chores herself which include securing the felt bareback pad when she is ready for a ride. Stirrups? Of course not.

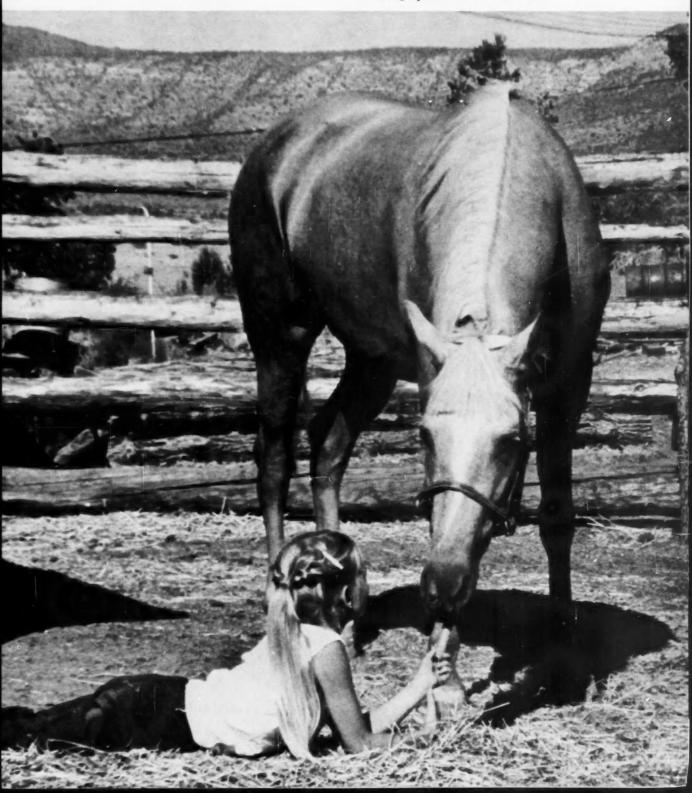
To see them off together on their morning jaunts through the red hills is a sight one doesn't forget too soon. Cleis is fearless. Her faith in Yasha is complete. Yasha responds with the eloquent grace one might expect of an Arabian. Her steps are dainty; her gaits rythmic and beautifully coordinated. There is a strong bond between little girl and big horse. This is a friendship destined to last and grow stronger through the years.

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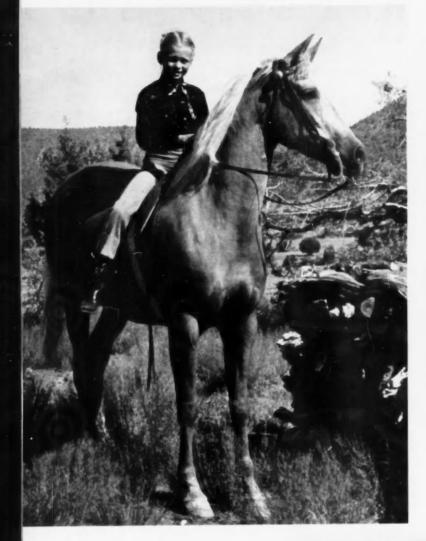


COMES TRUE

Cleis Coburn of Sedona receives a 10-year-old's dream birthday present: a horse.



LITTLE GIRL'S BIG WISH . . . continued





ABOVE—Out for a morning ride. "Cleis is fearless. Her faith in Yasha is complete."

UPPER RIGHT—One day Yasha broke out of her corral and bruised her left shoulder. Cleis doctored the wound and showered Yasha with love and affection.

RIGHT—Good grooming is important. Cleis combs Yasha's forelock.



A FAMOUS DESERT SWAP

. . . how Louis Wilhelm traded a span of mules and a wagon for the Thousand Palms Oasis . . .

By PAUL WILHELM (told through the eyes of his eldest brother, Louis, Ir., who accompanied his father on the 1905 trek to the oasis)

S DAD PUSHED the two big mules deeper into the suffocating August heat of the Colorado Desert of Southern California, the hills around us looked to my fifteen-year-old eyes like bleached cow bones. Sitting beside me on the wagon seat, Dad was short-tempered with the mules.

But, in 1905 everyone's nerves were jangled in this part of the country—years of drouth when cattle and horses lay dead in burnt-out pastures over which buzzards wheeled in rainless skies.

Only two weeks before I had sat with Dad on the corral gate at our Hemet Valley ranch listening to old Tom Acres, one-time prospector and now Dad's foreman, issue his tenth warning: "I tell you, Wilhelm, you've got

THE THOUSAND PALMS OASIS



to make a search for that palm valley out there in the desert if you would save your stock. Look at them," he grunted, "starving on their feet—800 head of the best horses, mules and jennies this side of Iowa. You going to let them die?" Tom dragged out his Durham sack and built a brown paper cigarette.

Dad looked south where the black dots of buzzards turned in the sky. Then he eyed me closely, and I knew by his resolute look that he'd come to a decision. "Louie," he said, "harness the best mule team to the big buckboard; we're taking a desert journey."

Days later now, under a blistering sun, we hadn't found the slightest trace of Tom's green spring-fed desert valley. More than that, our days in the desert were numbered: I was a school boy and summer vacations ended on specified dates.

One thing sure: under us was a strong vehicle for the rough rocky terrain over which we traveled. The buckboard was a 10-foot wagon, built for Dad the winter before in Denver by our Grandfather John Maxey, a Colorado pioneer. The rig was big-wheeled, had a tongue of hickory, and was altogether worthy of Dad's two prize animals—a pair of sleek mules, big-boned and long-legged, their build putting them in the blooded class.

Dad's Bavarian-blue eyes kept sharp watch for likely ledges, being somewhat of a mining man on the side, and signs of the sheltered valley. He hadn't given up, I was



ARTIST MARJORIE REED'S PAINTING OF "ALKALI" THORNBURG SHOWING THE DEED TO HIS HOLDINGS AT THOUSAND PALMS DASIS TO LOUIS WILHELM, SR.

sure of that, because he was an unusually optimistic man; but that old flair of optimism was not standing any too well on the nonce.

"It's a problem," Dad repeated, stirring on the seat, "but better solved by not calling it that; no problem is."

So once more he drove the team to a high point of land, pulled them up, stood on the seat and scanned shimmering horizons. Then he sat down, drew rein and clucked to the mules.

"Two weeks!" he exclaimed. "A search for nothing. Any man's endurance would end. We'll take the shortest way home. The stock will have to hold out on moldy straw. Old Tom was wrong, as usual. This is a dead land, scorched, burnt-out. All Tom knows is how to make a good batch of biscuits!"

Two weeks of rough travel, wild country, occasional north winds, warm days, clear nights, protected campsites and steaming hot meals! But, by noon of that day our clear day had deserted us. A red cloud of dust kept us coughing and rubbing our eyes. Early in the afternoon a strong northeast wind began to blow. We let the mules pick their way, usually on windward sides of hillocks, through cacti and creosote bushes, making us face, without let-up, a bombardment of sand and pebbles that hummed at us like rain. It worked through our defense of clothing until we were numb masses of sandy grit, longing to exchange the biting wind for the quiet of a protected campsite.

Late afternoon the wind backed up and blew harder. We eased around a series of hills and by this change in direction were able to shed some of our clothing, breathe easier, and take our bearings. I shivered with relief when I saw the broad flat mesa spreading east before us; but Dad, in spite of his sunburnt face and sanded eyes, sat on the seat with reins in his chapped hands and gave no outward sign of emotion.

As we worked across the flat tableland a change seemed to come over the mules: they pricked up their ears and set a faster pace. Then they were suddenly rearing back on their traces and Dad and I stared ahead at what appeared to be the edge of a steep bluff—the abrupt end of the mesa. Dad stood and shaded his eyes. I climbed onto the wagon seat. Through golden dust particles suspended in the air we beheld a sight that held us spellbound—a protected canyon approximately a mile long and a half-mile wide, surrounded on all sides by hills and table-land amber in the twilight.

Down the valley's center wound a white ribbon of sand, and on either side grew clusters of wild palms, willow, mesquite and cottonwood trees. Beneath this heavy foliage was a carpet of green grass—a wild garden in the wilderness, green and cool after days of monotonous duncolored hills.

Directly below us grew the largest cluster of palms, a regular "monkey heaven." Amidst this grove was a palm-thatched hut. Close by ran a stream of water beside which two donkeys frisked in a green meadow. All was diminutive and far away, and yet just a stone's throw below us. "It is a hidden paradise," Dad said at last.

Descending an arm of the bluff, past an old Indian encampment filled with Bighorn Sheep skulls with curving horns, we kept to the edge of the precipice. Dad turned and stared frequently, as if afraid that at any moment the oasis would vanish into the haze of summer dusk, a phantom mirage.

We gained the bottom of the bluff and emerged through a sandy gorge. A trail led past smoke trees into the heart of the junglelike oasis. Here Dad pulled up the team.

Apart from the mules' breathing, the hush was complete. Even linnets, high in green fronds, had ceased questioning. Around us the ancient trees appeared like giants out of Gulliver's Travels.

But there was something else—a strong sense of peace—as if I had been there before—and now was welcomed back. I think Dad caught my feeling. He looked down at me and smiled; then he patted my shoulder. Somewhere a bird caroled. Wind high in fronds made me think of people with secrets to exchange. There was the sleepy call of quail and the purling of flowing water.

"Peace," I heard Dad whisper.

Through windows of palm the mountains north were

lilac and I felt again the immensity of the desert beyond. But in the heart of the oasis there was a feeling of warmth and security.

"The days of sun and dust were worth it, Louis," I heard Dad say. Then he clucked to the mules. We wound out upon the grass meadow beneath the bluff. A light gleamed in the thatch hut—a very homey sight. Dad drove close by the rude hovel and cried out in a voice so loud it filled the valley with echoes. A man's bearded face inquiringly poked out.

"Alkali Al Thornburg!" Dad cried in astonishment. He reined in the team and sat staring as Thornburg came up to the wagon.

Standing there before us, Alkali Al made both Dad and me feel unkempt and dusty. His porcelain features, delicate skin and groomed black walrus moustache were not blemished by his 65 years nor by the desert winds. He looked like Bill Cody. He ran his searching gray-blue eyes over the buckboard, the two mules and their new leather harness.

"A fine span of mules you have there, Wilhelm," he declared. Still rooted to the buckboard seat, Dad spent an awkward moment; he usually wasn't at a loss for words. Meanwhile Thornburg came forward. "And I know stock," he said, running a hand down a mule's withers. Suddenly he looked up, leveled his gaze.

"What do you say, you Lucky Dutchman, to trading even—your team and wagon, which I'd say is worth \$300, for my desert oasis?"

Dad laughed outright. "Three hundred!" he snorted. "This outfit is worth more than \$500!" Yet Dad couldn't resist green growing things and spring water; besides, his stock needed plenty of green grass. "How much land have you?" he asked.

"Eighty acres," Thornburg replied, and drew from his pocket what turned out to be the original deed, complete with Theodore Roosevelt's signature. He held it up in plain sight for Dad to see.

"Does it include this big palm grove, the springs, the grass?"

"All in the 80 acres."

Dad climbed from the wagon and stood before Thornburg, sizing him up. "Just how did you acquire it?" he asked.

"Homesteaded it." Then he waved an abrupt hand and smiled, "But unhitch your team, tether them in the meadow, and bathe at the springs. I've just put supper on the stove." With that he turned on his heels and disappeared into the door of the hut.

We secured the team with stout ropes, and I followed Dad to the springs where a clear pool received our dusty bodies.

"All my life I've dreamed of such a place," Dad said.

When we entered the hut Thornburg handed each of us a glass of water with minute hairy seeds floating on the surface. "A drink made from the chia plant," he said. "The Indians taught me how to make it." It tasted a little of cinnamon and lemon.

Thornburg hovered over a tin wood-stove. A kerosene lantern hung from a cord in the rafters. Soon we sat down to a table spread with earthen plates. Thornburg dealt out savory foods from heavy pottery bowls. Snow white potatoes, whipped smooth, topped with chopped onions;



LOUIS WILHELM, SR., LEFT, AND TOM ACRES, FOREMAN OF THE WILHELM STOCK RANCH, FLANK A MULE THAT HELPED PAY FOR A DESERT OASIS

young rabbit cobbler; and as a gesture of "deep friendship" and "long business dealings" with Dad, he presented a pan of gold-crusted biscuits, hot from the oven, "not equaled anywhere, even by your gold-crazy foreman, Tom Acres."

Dad, pleasantly relaxed, turned to Alkali Al and asked why he had come to this isolated location in the first place? "For the peace and quiet," he answered. This sent Dad into peals of laughter. Whereupon Thornburg crimsoned, recovered and came to his own defense. "Even a horse trader might want peace and quiet," he said bluntly.

Then he told us: "It was four years ago I went looking for the Lost Pegleg Mine. You've heard of it—probably been out looking for it yourself." He gave me a wink. "I found this valley on one such excursion, took out first papers and came here three months a year. Not an easy thing. I'd ride by train to the Palm Springs depot, walk to the village, rent two donkeys from the Indians, and walk the 15 miles east across dunes to this oasis in the hills. Once, old Tom Acres wandered in, almost overcome from thirst.

"After three months of silence—I never could stand too much silence—I'd take the train back to Los Angeles and walk through each pullman trying to auction the oasis to Easterners. They scoffed at me. Sick as I was of the homestead, I couldn't give it away. And now you turn up."

Dad changed the subject. "Have Indians come here since your sojourn?" as asked.

"A few, mostly migratory clans from reservations south. They stay during the ripening of mesquite beans, chia and mescal, sometimes going into the uplands for pinyon nuts and sheep," he answered.

Alkali Al left the table, dug into a corner cupboard, and returned with a little *olla* filled with pinyon nuts. "This might be called a symbol of friendship," he smiled. "Some sort of present is left each time they come." He passed the *olla* to Dad, and then to me.

"And you," Dad asked, munching the savory meats, "do you leave them anything?"

Thornburg's eyes twinkled. "Sometimes," he said. "A pocket knife, a string of beads, a sack of tobacco—whatever is handy. Once I left an old Winchester rifle and four bullets. Next year when I returned I found the remains of a Bighorn Sheep picked clean by coyotes. The Indians packed that animal 12 miles to show their appreciation."

As Thornburg placed his third plate of biscuits on the table, Dad went outside to the wagon and returned with a bottle of old sauterne wine. With great pomp he cracked the seal and drew the cork. While Thornburg poured rich white wine into glasses, I cleared the table.

"A toast," said Dad, as he sniffed the bouquet, "to a trade: 80 acres of desert for a buckboard and a span of mules."

As the men drank slowly, I slipped onto a couch and let the warmth of the room soak into me. Outside the night wind pushed through the valley, occasionally rustling our thatch hut. A state of well-being stole over me. As I lay back, sleepily watching the two men sip from glasses as blue smoke rose from their pipes, I saw an occasional hand reach out to the pan of biscuits on the table. Then the passage of time and the happenings of the evening slowly came to an end as I gently fell asleep.

At dawn we began the trip to the county seat at Riverside to consummate the trade. Three days later, coming down the stone steps of the Courthouse, Thornburg turned to Dad and said, "Why did you want that land so much? You must have, you know, to trade it for such valuable property."

Dad glanced at his friend. "Besides the green grass, for the same reason you wanted it—the peace and quiet," he said.

Alkali Al rubbed his chin. "I know a trade when I see it."

We turned down Lemon Street and headed for the livery stables. "Someday the desert will come into its own," Dad said. "No other place possesses such a natural charm as does that oasis. It's a strange thing, it draws one to it."

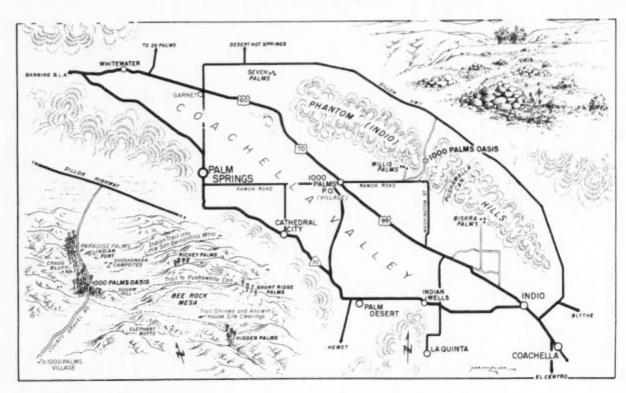
Thornburg's eyes were dim. "Perhaps I shouldn't have let it go so easily," he said. "Perhaps that oasis . . . well, not in my time."

As we entered the cool darkness of the stables both men were silent. Was it that they were experiencing the vision that suddenly filled my mind—a lost oasis rimmed with golden hills filled with whispering palms, song of birds and the drowsy murmur of water?

Both men sighed, but not, I was certain, for the same reasons.

You are welcome to visit Thousand Palms Oasis. There are areas for camping, picnicking and parking small house trailers (no charge), but oftimes space is limited because of the many Scout groups, and biology, zoology and anthropology field classes who come here in the winter season. The area is off-limits during summer months. Write to Paul Wilhelm, Thousand Palms, Calif., for camping information.

In addition to the native palm groves, Thousand Palms Oasis offers spring water and flora and fauna typical of luxuriant desert oases. Also of interest is the evidence of former Indian occupancy including ancient trails through the foothills, and camp- and housesites.



THE CACTUS GARDENER LEARNS PROPAGATION

By Ladislaus Cutak

The Missouri Botanical Gardens' Cactus Expert



ALL CACTI CAN
be grown from seed,
although in many cases
it takes a long time for
the plants to reach maturity. Many cacti produce numerous tiny offshoots along their stems
which can be removed
and grown into healthy
individual specimens.
Propagation of cacti
also can be accomplished by cutting off
any portion of the stem

with a sharp clean knife, allowing the incision to heal, and then placing the cut-off section in a sandbox for rooting. Grafting is a third way to increase stock.

Even though a great deal of patience is required for seed culture, it is a very rewarding way of collecting cacti. To the hobbyist it will prove to be the cheapest means of acquiring a large collection of commendable species (it is surprising how many hundreds of seedlings can be grown in a window-box). And seedlings provide the hobbyist with a source of material to trade to other enthusiasts. Seedlings also are useful to plant in novelty containers, and for study.

Cacti seed usually can be bought at nominal cost from regular seed outlets. If greenhouse culture can be given the new plants, it doesn't matter when the seeds are put down, but in the home sans greenhouse, seed sowing can begin after the middle of April and continue through the summer season. For best results, a uniform temperature of at least 70 degrees and no higher than 90 degrees should be maintained around the seed pans.

Cacti seeds vary in size, and they should be separated accordingly and sown in separate pans or pots. Any container which drains freely can be used for seed culture—ordinary flower pots are very satisfactory. Thorough drainage should be provided in the bottom of the seed pan in the form of a generous supply of potsherds or gravel. Base soil should be sifted atop the gravel to within an inch of the top of the container. Any good porous soil will do, especially if it contains a mixture of screened sand, well-rotted leafmold and garden loam, in equal proportions. Beware of using soil that has a clay base, for it will not drain readily.

Before sowing the seed, firm the soil with a small wooden tamper. Fine seed need only be broadcast, but

the larger seed, such as those of Opuntias, should be spaced in rows to give each seedling a chance to develop after germination. The seeds should be lightly covered with soil, and I have found it practical to add atop this a light covering of very fine gravel. This acts as a protective blanket against too rapid evaporation of soil moisture, and also provides support for the tiny plants.

After the seed is sown, the soil must be watered. This is best done by placing the seed vessel in a pan of water to allow the moisture to seep up through the drainage holes. The reason I do not recommend watering from the top is that there is great danger the seeds will be floated away or bunched up. However, if a very gentle misty spray can be created, an overhead watering method can be used without ill effect.

Keep the seed pan moist, but not soaking wet. Never allow the seed pan to dry out. A simple watering by immersion will usually last five to 10 days.

After the seed pans have been moistened, let excess water drain off, then place a panel of colored glass over the pans and set them out in a well-lighted position in the greenhouse, in the window, or under a fluorescent light. The glass lid helps to maintain an even temperature on the seed bed, and prevents the soil from drying out too rapidly. Later, it will shield the seedlings from the direct rays of the sun. Since fresh air prevents the spread of fungus, it is important to remove the glass cover for at least an hour each day.

As a rule, cactus seeds begin to germinate within a fortnight, but in some instances it takes longer. If there is no sign of germination after three months, however, discard the seed pan.

In cactus culture, early transplanting is not necessary unless the tiny seedlings begin to crowd each other. The plantlets may be transplanted into flats or larger pots, but care must be taken not to injure the fine roots. Keep the newly-transplanted seedlings in a shady location for a few days before subjecting them to strong sunlight. Avoid frequent shifting or transplanting, and be sure to use much smaller pots than would ordinarily be used for other plants.

Cacti propagate readily by means of cuttings. Almost any portion of a cactus stem can be cut off, left to heal, and then induced to produce new growth. All cuttings with a large cut surface must be kept in a dry atmosphere for a few days so that a callus or protective covering is formed over the wound. This is very important as it prevents bacterial rot which would destroy the cutting. Cacti with small exposed surfaces form a protective tissue within a few hours.

When cuttings are made, be sure to use a clean sharp knife or razor blade. If the stems are jointed, always make

For Ladislaus Cutak's introduction to the cactus hobby— "Cactus Gardening for the Beginner"—see last month's Desert



SEEDLINGS OF ERIOCEREUS MARTINII-A NIGHT-BLOOMING CACTUS

a cut at the base of a joint where the point of contact is always much smaller, therefore healing faster. But, if a cut must be made elsewhere, be sure that it becomes well-healed. Never be too hasty to place the cutting in the rooting medium.

Experience has shown that cuttings root more readily in sand or vermiculite. After a good root system is established, the cutting must be transferred into a soil medium where it will be able to derive nourishment for progressive healthy growth.

Grafting is another successful propagation method. This is not too easily performed by the inexperienced person, but with practice and patience anyone can become an expert. By grafting it is possible to unite two separate and distinct plants and make them grow as one. There are a number of reasons why grafting is used: it speeds the growth of certain plants which are by nature slow-growers; it hastens smaller seedlings to maturity; it is the means of preserving rare species which might be lost through decay; and it insures a good crop of flowers on plants which seldom bloom when grown on their own roots under artificial cultivation.

There are two types of grafts usually employed: the cleft and the flat. The former is suitable for all slender-stemmed varieties, while the latter is used for the thick globose cacti types.

In cleft-grafting, the stock should be cut to a desired height, usually six to 12 inches, and a V-shaped slit made on top with a clean sharp knife. The scion wedge is cut at the same angle, and this portion is inserted into the stock. A thorn from a Pereskia or Opuntia makes a handy staple to help hold the united portions together. The graft should be closely wrapped with twine to further prevent the joined sections from drawing apart.

In flat-grafting, both scion and stock are cut straight across. They should be the same width at the contemplated

A Short Course In The Natural History of Cactus

• There are approximately 2000 species and varieties of cactus plants, all of them native to the Western Hemisphere. Some have been found growing wild in Africa, but it is a matter of conjecture as to how they got there. Most naturalists think the seeds were carried across the ocean by birds. It is easy to see how the sticky seeds of some cactus plants would adhere to the beaks and feathers of migratory birds, and then just as easily be brushed off in places befit for germination.

Judging from appearances, cacti are probably the most whimsical of all plants. Some look like the cacti of our imagination: grotesque and spiny; others don't fit the mold. Generally speaking, there are two kinds of cactus: those inhabiting deserts, and those preferring jungle or forest homes. Their ecological adaptations make them very dissimilar in appearance. The desert cacti usually have spiny armament, whereas the jungle types frequently are unarmed. The former are heavily ribbed or fluted; the latter are terete (cylindrical and tapering) or flattened.

To be a member of the cactus family, a plant must have a number of qualifications, chief among them being: it must be a perennial (live for years) with various degrees of succulency in its stems; it must possess certain modifications in the flower and fruit structures; and it must possess specialized organs

called areoles, perhaps the most distinguishing feature of a cactus. Areoles are small areas marked-out upon the surface of a joint, in either regular or irregular fashion, from which leaves, branches and flowers make their appearance. Areoles correspond to the nodes of other plants. They are usually round and consist of two buds, but they can be of other shapes—and size varies from minute to fairly large. Areoles are usually filled with felt, wool, bristles, hair or spines, but occasionally are naked.

Cacti are dicotyledonous (producing two seed leaves as opposed to being monocotyledonous — producing only a single leaf). Cacti flowers are perfect, that is they produce all the parts of a flower—petal, sepal, stamen and ovary. The ovary has to be inferior in position—the sepals and petals are inserted on top or above the ovary. And the cacti fruit must be a berry, regardless of size and shape, and with all the seeds enclosed in one compartment and not divided into sections as are the seeds of apples and oranges.

The cactus family is divided into three distinct tribes, which are subdivided into subtribes, genera, subgenera, species and varieties. The members of each division have not only the characteristics of the family, but they also have other features in common which set them apart from the rest of the family. The three tribes are Pereskia, Opuntia

Members of the first are assumed to be the most primitive and for the most part are woody and leafy trees, shrubs and vines. In early times, many of the arborescent Pereskias were mistaken for apple and lemon trees and even purslanes. At most there are less than 25 Pereskia species.

The second tribe, Opuntia, has the widest distribution. Its members are scattered throughout the Western Hemisphere from southern Canada to the southern tip of South America, and on most of the adjacent islands, particularly in the Caribbean. The most common members are the cacti with flat padlike joints or tubercled cylindric stems, known in the trade as prickly pears and chollas. Most of the members of this tribe bear glochids in the areoles-bundles of tiny barbed bristles that become easily dislodged from the plants, but withdrawn with difficulty from flesh or clothing coming in contact with them. Approximately 300 species are recognized in this

The third tribe, Cereus, is the largest and most complex, containing over 1000 species ranging from the dwarf to the gigantic in size. The showiest and most brilliantly-flowered cacti flowers come from this tribe. Cereus have succulent stems which are usually prominently ribbed, angled or fluted.

union. The scion is simply set upon the cut-surface of the stock, and they are held together with binding twine.

Freshly-grafted plants should be placed in a moderately warm but shaded place until the cut surfaces grow together firmly and evenly.

In the planning and construction of a cactus garden, several facts ought to be considered. First, you must decide whether you want an all-cactus garden, or if you want to mix cacti with other succulents, or cacti with alpines. Unless created with taste, a cactus garden will look out-of-place, for a jumble of haphazardly-placed rocks and plants do not constitute a rock garden.

At most homes—particularly those in cities where the land tends to be level and the lots are small—a cactus garden must be openly artificial. In such cases, the rockery should be placed in a corner of the yard where it will not stick out like a sore thumb to break the general outline of the landscaped grounds. This type of garden should be made to look as natural as possible. Inspiration for its design can be derived from studying the way nature piles rocks on a hillside.

Never build a rockery in the shade of trees, for succulents delight in full sunlight. The best rocks to use are those that are porous and moisture-absorbing, such as sandstone and limestone. There is no set rule for grouping the plants around the stones. Bear in mind, however, that a rockery consisting exclusively of cactus plants is a complete garden in itself—it is much harder to create an eye-appealing rockery when you mix in other succulents or alpines.

Some folks build shelves into a wooden fence and place all their small plants on them. In this way the plants get optimum sunshine and do not take up space in the yard. Others build "formal gardens" with potted cacti by placing their tallest plants in the center and graduating the sizes to the outer border. Pots can either be plunged into the ground up to their rims, or set on top of the ground. Less frequent watering is required with the former method.

In recent years patio gardens have become very popular. True exotic foliage plants are frequently planted in these enclosed gardens, but you'd be surprised how nicely cacti and other succulents will ornament such a place.

There is no yard too small or inappropriate for a cactus collection. It's a great hobby, for cacti are great plants once you get to know them.

A GROUP OF GRAFTED CACTUS PLANTS

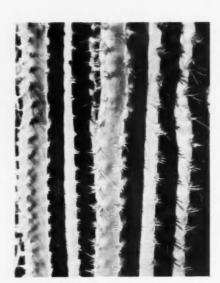


FOR DRAMATIC CLOSE-UP VIEWS OF CACTI, TURN THE PAGE

Cactus Close-Ups . . .



THE STRAWBERRY HEDGEHOG CACTI'S FORMIDABLE DEFENS



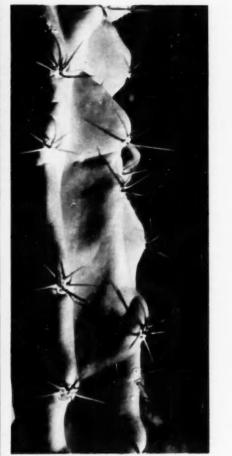
"COMB OF THE INDIAN"— A CACTUS NATIVE OF MEXICO



PADS OF A PRICKLY PEAR

☐ There is a general inclination to look at nature's children as a whole. Because of this, many symmetrical expressions of beauty are overlooked—desert cacti providing an excellent case in point. ☐ The most noticeable comeliness of these succulents occurs in the spring and early summer months, of course, when their varied and colorful blossoms come forth; but cacti have a constant beauty of pattern about them that can be enjoyed every day of the year. ☐ To see this special beauty we must view the plant close-up. But, sometimes the close-up may be beyond the scope of the human eye, and in order to "see," the lens of the camera must be used. ☐ With the enlarger, unwanted areas are further eliminated, and the finished picture is a pure concentration of a fetching spiny arrangement.

PHOTOGRAPHS BY JAMES TALLON



FREAK FORM OF THE NIGHT BLOOMING CEREUS GROUP



THE GOLDEN BARREL CACTUS

THE BORDER ILLUSTRATION IS A CLOSE-UP VIEW OF A BARREL CACTUS

Five Gem and Mineral Field Trips on the Colorado Desert

By GLENN and MARTHA VARGAS

☐ Here are reports on the current status of five gem and mineral collecting fields on the Colorado Desert of California. Glenn and Martha Vargas of Thermal, who recently revisited these areas for Desert Magazine, are pioneers in the rockhound hobby. They have had long association with local and state hobby groups, and for several years have taught lapidary classes in the public schools.

The three maps accompanying this article appeared in the original Desert Magazine reports on these fields. Consult text for changes in road conditions—and make local inquiry before driving desert back-roads.

(1) GYPSUM ON SALTON SEA'S SHORES - The area containing the many forms of gypsum that John Hilton wrote about in the March '40 Desert Magazine is still an interesting one to visit. Actually, the collecting field is much larger than John reported (see map No. 1 below), and a short distance south it is possible to find crystal

To reach the collecting grounds, travel south on Highway 111 out of Mecca. The main entrance to the recently developed Salton Sea State Park is a better check-point today than the one used in the original article. From the park entrance drive south about 12 miles. The pole used by John to pin-point the field is now renumbered and useless as a guide, but another pole conveniently has been marked. Look for it on the far-side of the railroad tracks to the left of the highway-a pole numbered 646 in large black numerals on a white background.

Stop at this point, walk across the tracks, and you are at the edge of the gypsum field. This place has been visited by many rockhounds in the past 20 years, and much of the better material has long-since departed. However, some nice specimens still can be found near the sandstone

ridge clearly visible to the east. We also discovered that by working southward toward the former station of Bertram, and even beyond it, the same type of material can be found.

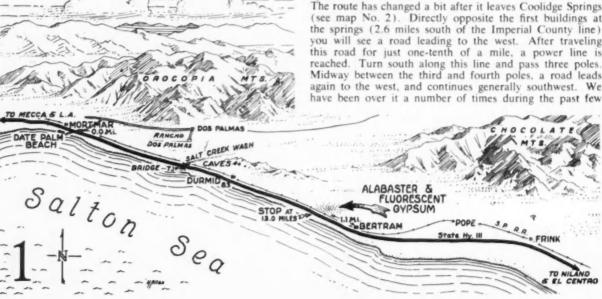
This is a productive area, but unfortunately the various types of material are not to be considered excellent in quality. The crystals are usually just enough misshapen to keep them out of the "fine specimen" category.

The alabaster pieces are not large enough to do much with in the line of carving, but they make interesting cabinet specimens. Alabaster is rather rare.

For the fluorescent enthusiast, much of the material here is of real value. Some of it is quite bright under the ultra-violet lamp.

By working on down to the vicinity of Bertram, we found veins of gypsum that at time produced crystal clusters (selenite). These specimens are not top quality. Further prospecting of the region to the south and east might un-cover areas that could yield fine specimens.

RAINBOW STONE NEAR COOLIDGE SPRINGS -The hill that produces the rainbow stone as described by John Hilton in the June '39 Desert is still worth a visit. The route has changed a bit after it leaves Coolidge Springs (see map No. 2). Directly opposite the first buildings at the springs (2.6 miles south of the Imperial County line) you will see a road leading to the west. After traveling this road for just one-tenth of a mile, a power line is reached. Turn south along this line and pass three poles. Midway between the third and fourth poles, a road leads again to the west, and continues generally southwest. We have been over it a number of times during the past few



years, and find that it changes very little. The road is rough, but easily traveled by the higher-clearance automobiles. There are a number of recently-made turnoffs, but the main road follows the southeastern slope of the hill and winds in and out of a wash. If you find yourself getting out in the open away from the wash, you undoubtedly have taken one of the many incorrect forks.

If you started checking your mileage at the county line as suggested by John Hilton, at 5.5 miles you will have reached private property—and a mine. Turn around here and park at the first good turnout below. By working the sides of the hill on the left, you should find ample material. You also can find it in the wash at the base of the hill. We have a number of nice sets of bookends made of the rainbow stone, but have never seen what we felt to be good enough material to cut into cabochons. All of our trips here have been to look for the larger chunks of the fine-grained variety.

(3) BANDED RHYOLITE IN PINTO BASIN—Only three years have passed since Eugene Conrotto wrote in the September '57 issue about the fine rhyolite nodules to be found just south of the U.S.-Baja California border west of Mexicali. Access to the area is a bit easier today, but four-wheel-drive transportation is still highly advisable. The turnoff from the Mexicali-Tujuana highway at 26.6 miles from Mexicali is still the correct mileage and the total of 31 miles to the nodule field is also correct (see map No. 3).

This material has always been a favorite of ours. It is of a much finer-grained structure than specimens from near Coolidge Springs, and the colors of the Mexican material are much brighter and more varied. We have been able to cut this rhyolite into nice cabochons. In our opinion, the characteristic regular banding of this material is the result of a form of concentric weathering. At widely-spaced intervals over a long period of time, water penetrated the nodules, and each time it did a small amount of soluble as well as insoluble coloring matter was forced deeper into the rock. These then tell in a sense a story of "rings" left by repeated injections of solutions. Careful observation of the nodules themselves will show that the outline

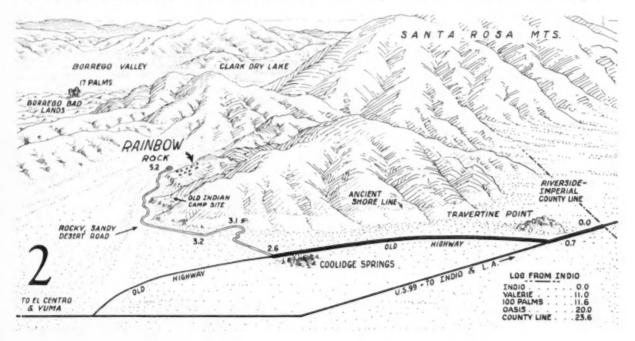
of the bands generally follow the outline of the nodule, and as the bands progress toward the center they become more and more circular. This circular center band (as opposed to the irregular outer band) is simply the result of the smoothing out and pinching off of the outline irregularities during the water penetration.

The petrified wood as described by Conrotto is still to be found, but because of the great interest in "wood" it is not as plentiful today in Pinto Basin as it was in the past. While hunting the area along the bench to the east on one of our trips, we found some veins filled with dog-tooth calcite crystals. None were of excellent quality, but it is not often that the average collector gets to dig these crystals. Look for them in the large cracks in the rock outcroppings.

(4) SAND CONCRETIONS WEST OF SALTON SEA—Things have really changed at Salton Sea since March '52 when Harold Weight wrote about the concretions found on the west side of the inland sea. Roads, airports, boat marinas, houses and real estate offices have moved in, but happily the concretions are still to be found. These bizarre sand sculptures are very popular with beginning hobbyists—especially those who want to display a desert trophy in their gardens.

To reach the area you must first drive to the Salton City Airport. Turn right (west) at the airport and drive alongside the landing strip to its far end. Here you will be close to the area described by Weight. The desertlands to the west and northwest are amply supplied with concretions.

On our last visit we found flagstone-like concretions piled-up at the end of the airstrip, evidently awaiting shipment to commercial garden rock dealers. The areas beyond the airstrip interested us more, and soon we discovered fields of small concretions there. These pieces resemble all kinds of imaginary animals, and this area is safe to travel with most automobiles, with the small washes presenting the only hazards. But walking the desert is the only way to prospect for mineral specimens—especially concretions which are usually partially buried beneath the sand. You just can't drive and watch for washes, big rocks



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A-Petrified Wood Area

B-Rhyolite Area

To Tecate
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To Mexicali

and ruts with one eye while the other scans the desert for concretions.

Very few of the large (one- to three-foot) animalshaped concretions are left in the Salton Sea region. Most have long since been carted away. But the small ones (a few inches to nearly a foot in length) still are very plentiful. They are easy to carry (the large ones were not), their

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variety is infinite, and they are a real stimulant to a vivid imagination.

(5) BLOODSTONE AND "BACON ONYX" IN THE OROCOPIA MOUNTAINS—The trips to the bloodstone deposit described in the March '38 Desert and the "bacon onyx" area featured in the November 40 issue are located very near each other, and it is necessary to travel Salt Creek Wash to reach them. Since the time John Hilton



wrote these articles, two major construction projects have taken place in the immediate area. Just a short way northeast of Dos Palmas (see map No. 1) now runs the Coachella Branch of the All-American Canal, and through a greater portion of Salt Creek Wash runs the railroad serving the Kaiser Iron Mine near Desert Center. The canal necessitates a different approach to the road up the wash, and with the coming of the railroad, travel up the wash by car seems to have nearly stopped. As a result, the road up the wash is in very poor condition. Thus we

do not recommend a field trip to these Orocopia Mountain

This may sound like sour grapes, but even in the days before the canal or the railroad, we never felt the material from either location was really worth the effort. We have seen very few pieces of the bloodstone which could be made into cabochons. As for the "bacon onyx" field, we feel it is not productive of cutting or specimen material. To approach either area today, a four-wheel-drive vehicle

Kanab--Southern Utah's Cow-Town Tourist Stop

By FRANK JENSEN
Desert Magazine's Utah Travel Correspondent

THE PAIUTE Indians called it kanab, "The Place of the Willows," and they used the slender branches that walled Kanab Creek to build their kahns or papoose carriers

The first Mormon outpost was built here in 1865 on the southern flank of the State of Deseret. You can't find Fort Kanab today. Only a marker by the side of U.S. Highway 89 tells of the efforts by the original 15 families to build the fort. The Blackhawk War forced abandonment of the project, and only after enlisting the aid of the local Indians were the settlers able to complete the outpost on the banks of Kanab Creek in 1867-68.

Brigham Young recognized the value of Kanab in the scheme of empire building, and in 1870 drew the faithful of the church from nearby towns to bolster the frail

During the 1870s Kanab prospered as a cow-town. The lines of the Deseret Telegraph Company reached here in 1871. The following year Kanab became the head-quarters for Major John Wesley Powell's mapping of the Colorado River Plateau.

Like most small Utah towns, the highway dissects the main street, lined on both sides by modern well-kept motels and restaurants, set side-by-side with old-fashioned mercantile and curio shops. Kanab is a cow-town, a tourist stop, the place where levis and bermuda shorts meet.

From Kanab it is only a two hour drive to the North Rim of the Grand Canyon, or an hour's ride in the opposite direction to Utah's Zion National Park.

Kanab also has a few attractions it can claim as its own. Among them are Indian Ruins, the Coral Pink Sand Dunes, and colorful Johnson Canyon.

The Sand Dunes cover a six-square-mile area northwest of Kanab. This site is reached by a 10-mile graveled road which leaves U.S. 89 between Kanab and the Mt. Carmel Junction. The dunes, which are noted for their pink coloring, have been used for several Hollywood motion picture Johnson Canyon, 18 miles east of Kanab, likewise has been a favorite of movie makers. The canyon has its own 1880-style Western cattle town, complete with saloons, dance hall and country store. But, no one lives in the town in Johnson Canyon. It's just a facade built up, like so many billboards of false fronts, for use as Kanab

While the town may not be real, the movie industry is. More than 70 Westerns have been made out of Kanab since the filming of the "Dude Ranger" in 1934.

Because Kanab has headquartered so many motion pictures, the local chamber of commerce has styled the town as the 'Outdoor Movie Capitol of the World.' The man most responsible for it all is a gravel-voiced restauranteer by the name of

The Parry Lodge is one of the finest eating houses in Utah, with a bill of fare to delight any gormet. The Lodge, which in 1956 was voted one of the 10 best roadside inns in the United States, has built its rep-utation on excellent service, fine food, and a homey atmosphere.

During the 1920s the Parry Brothers, Chauncey, the oldest, Gronway and Whit-ney, drove their buggy buses into Zion, the Grand Canyon, and Bryce Canyon. In those days touring the Utah-Arizona Parks was a real adventure where you hauled everything from shovels to food and water. The tour required three weeks to complete.

Kanab was one of the stops on the Parry Stage Line tour, and an old house built in 1890 served as an overnight lodge for bone weary travelers. When the Parry brothers sold out in 1929 they held onto the home which was later remodeled to cater to the infant movie industry they helped promote.

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In a way the story of the Parry Lodge the story of latter-day Kanab. The city of 2900 has some of the finest restaurants and motels in Southern Utah, many of them and motels in Southern Clan, many of them built to the standards of excellence set by the Lodge. Prices are moderate, too. Room rates run from \$5 to \$14 a night. From June through August it is best to write or call in advance for reservations.

Here's a September calendar of events Here's a September calendar of events for Utah: 2-3: Uranium Days, Moab; 2-5: Harvest Days, Payson; 2-5: Beaver Valley Roundup, Beaver; 3-5: Iron County Fair, Parowan; 4-11: Speed Trials at Bonneville Salt Flats (World Land Speed Record at-tempt on 11th); 5: 16th Annual Steel Day Calberting American Fork; 5: Roy Days Celebration, American Fork, 5: Roy Day Celebration, Roy; 9-10: Peach Days, Brig-ham City; 18-19: 40th Annual Melon Day Celebration, Green River.

The following events will take place in Nevada this month: Sept. 2-5—Elko County Fair; Sept. 3-5—Lions Stampede and ty Fair; Sept. 3-5—Lions Stampede and 49er Show, Fallon; Sept. 3-5—Nevada Rodeo and Fair, Winnemucca; Sept. 10-11— Lake Mead National Ski Races; Sept. 16-18
—Max Conrad Air Races, Elko; Sept. 21-25 Community Fair, Las Vegas.

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- GENUINE TURQUOISE: Natural color, blue and bluish green, cut and polished cabochons—25 carats (5 to 10 stones according to size) \$3.50 including tax, postpaid. 50 carats (10 to 20 cabochons) \$6.15 including tax, postpaid in U.S.A. Write for folder. Elliott Gem & Mineral Shop, 235 E. Seaside Blvd., Long Beach 2, Cal.
- CALIFORNIA DESERT rocks. Gem quality. Polished. Large assortment. One dollar postpaid. Pollard, 12719 Laurel Street, Lakeside, Calif.
- BEAUTIFULLY POLISHED apache tears \$3 pound, agate or jasper \$2 pound, pure tin oxide \$1.95 pound, plus postage. 2039 East Buckeye Road, Phoenix, Arizona.
- FIRE AGATE, tumbled, polished, will cut a 13x18 mm. cabochon. \$3 each tax included, postpaid. Fire guaranteed or money refunded. Dimick Mining Co., P.O. Box 1795, Clifton, Arizona.
- OPAL, AMETHYST, etc. 10 ringsize stones, ground and polished ready to set, \$5. Opals, deep red, blue, green, golden flashing in all colors of the rainbow, direct from the mine, 15 for \$5. Kendall, San Miguel d'Allende, Guanajuato, Mexico.

. GEMS, DEALERS

- VISIT GOLD Pan Rock Shop. Beautiful sphere material, mineral specimens, choice crystals, cutting materials, jewelry, bolo ties, baroques, spheres, bookends, paperweights, cabochons, faceted stones, fluorescents, jewelry findings, lapidary equipment and supplies, Navajo rugs, custom sawing—by the inch or shares. Saws, up to 30-inch diameters. John and Etta James, proprietors, 2020 North Carson Street on Highway 395 north end of town. Carson City, Nev.
- CHOICE MINERAL specimens, rough and cut gem material, lapidary and jewelry equipment and supplies, mountings, fluorescent lamps, books. Valley Art Shoppe, 21108 Devonshire Street, Chatsworth, California.
- NEW LOCATION, new store: everything for the rock hounds, interesting gifts, minerals, slabs, rough material, lapidary supplies, mountings for your cabs. Stop and see us. Shamrock Rock Shop, 593 West La Cadena Drive, Riverside, California. OVerland 6-3956.
- ANNOUNCEMENT TO dealers and suppliers: The Coles', "nationally known" for fine gemstone, minerals, Indian artifacts, specimens, collectors items, etc. are now offering wholesale service and prices on several items. More will be constantly added for wholesale purchasers. Dealers invited to send their names for present and later offerings. Suppliers information on materials, etc. invited, if priced so we can wholesale to others. The Coles', 551 S.W. Coest Hiwey, Newport, Oregon. Retail and wholesale.

- DESERT ROCKS, woods, jewelry. Residence rear of shop. Rockhounds welcome. Mile west on U.S. 66. McShari's Gem Shop and Desert Museum. P.O. Box 22, Needles, California.
- RED ROCK Shop has minerals, slabs, petrified wood, gifts, curios. Will trade. 2½ miles southwest on U.S. 89A, Sedona, Arizona.
- FROM OKLAHOMA: Everything for the collector. Domestic and foreign minerals, gem rough and supplies. Free lists. Museum & Collectors Supply, Box 1188-D, Ardmore, Oklahoma.

. GEMS, MINERALS - FOSSILS

- FOSSILS. 12 different for \$2. Other prices on request. Will buy, sell or trade. Museum of Fossils. Clifford H. Eerl, P. O. Box 188, Sedone. Arizona.
- FINE DOMESTIC and foreign crystals and massive minerals. Please ask for free list. Continental Minerals, P.O. Box 1206, Anaconda, Montan.
- BEGINNERS ILLUSTRATED catalog. Specialized mineral, gem, crystal, fossil study collections; chemical, blowpipe, ultraviolet test kits, manuals, field guides, other beginner accessories. 25c. Mineral Lore, 3004 Park Avenue, San Bernardino 2, California.
- GOLD SPECIMENS prepaid to any address in U.S. \$1 each. Write address plainly. Prospector, 347-A West 23rd Street, San Bernardino, California.
- FOUR NATURAL staurolites, cross on both sides, for \$1 postpaid. "Animals" assembled from uncut quartz crystals "Rockhound," \$1.25 each. Five assorted enimals, \$5.50 postpaid. Reasoner Rock Originals, Crown King Highway, Bumble Bee, Arizona.

. GEMS, ROUGH MATERIAL

- TURQUOISE FOR sale. Turquoise in the rough priced at from \$5 to \$50 a pound. Royal Blue Mines Co., Tonopah, Nevada.
- GEM QUALITY golden tigereye \$1 pound, Mojave Desert agate, howlite, jaspers 75c pound. Australian rhodonite, aventurine, rainbow obsidian \$1 pound. Summer special: 10 pounds California mixed rough \$5. Highly polished mixed baroques \$2.50 pound. Postage and tax extra. Tubby's Rock Shop, 3329 Mayfield Ave., La Crescenta, California.
- OPALITE: ALL beautiful colors and shades, gem or decorative. State which. \$1 per pound, five pounds minimum order. Sales tax 2 percent, F.O.B. McDonald Opalite, Box 521, Milford, Utah.
- CENTRAL OREGON rocks. Good variety for cutfing. Good, 10 pounds \$3.50. Better, 10 pounds \$6. Best, 10 pounds \$11. Postpaid. 100 pounds of above mixed, \$40 freight paid. Ashby's, Route 2, Box 92, Redmond, Oregon.
- TRINIDAD JASPER 10 pounds \$8.50, postpaid.

 Dealers write for prices on baroques. Roy's Rock Shop, P. O. Box 133, Trinidad, Calif.
- WOOD, VERY colorful and good gem quality. State color and size wanted, 75c per pound, postage paid. Simonds Mines, Box 511, Hanksville, Utah.

- MINNESOTA SUPERIOR agates ½ to 1 inch \$1.35 pound postpaid; 1 to 2 inch \$2.50 pound postpaid. 3 polished Thompsonites \$1 postpaid. Frank Engstrom, Grey Eagle, Minn.
- GEM MATERIAL from the Mojave Desert. Your choice: Mojave agate, lavic jasper, verde antique, palmwood, travertine (green), chapenite, onyx, opalite, jasp-agate, buds eye, and mixed jasper. 100 pounds \$22.50; 100 pounds mixed \$12.50. Sample \$3.50. All material F.O.B. Barstow. Morton Minerals and Mining, 21423 (Old) Highway 66, R.F.D. 1, Barstow, California. Phone 8551.
- CALIFORNIA GEMS rough. 14 full pounds agates, jespers, palmwood, howlite, others. Just \$6 delivers. Location and type identified. Small saw size. Prince C. Parkhurst, 14823 Huston Street, Sherman Oaks, California.
- COLORFUL AUSTRALIAN Fire Opal; rough or cut. No deposit, approvals sent on request. See before you buy. We deal in "Opal Exclusively." Free list. Western Rock & Gem, 20385 Stanton Avenue, Castro Valley, Calif.
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- VIRGIN VALLEY opal: Recognized world's most colorful specimens, a must for all rockhounds, from our own mine in the Silicon Range, Nevada. 4-inch vial \$3. Money back if not as represented. Jade Rocks & Shells, Box 87, Shell Beach, California.
- OPALS AND sepphire direct from Australia. This month's best buy: rough emeralds fine cabochon material, deep color, 2 to 25 carat pieces. 2 qualities, 1 ounce \$15 and \$45, sent airmail. Send personal check, international money order, bank draft. Free 16 page list of all Australian gemstones. Australian Gem Trading Co., 294 Little Collins St., Melbourne C.I., Australia.
- GEM ROUGH; mineral specimens, quality guaranteed. Special this month—blue topaz specimen, 25c postpaid. Free list. The Vellor Co., P.O. Box 44(D), Overland, St. Louis 14, Missouri.

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- FINE RESERVATION-MADE Navajo, Zuni, Hopi jewelry. Old pawn. Hundreds of fine old baskets, moderately priced, in excellent condition. Navajo rugs, Yei blankets, Chimayo homespuns, pottery. A collector's paradisel Open deily 10 to 5:30, closed Mondays. Buffalo Trading Post, Highway 18, Apple Valley, California.
- IRON OR brass tomahawks, scalping type with pige bowl on other end, four styles. \$5 postpaid. For collectors and museums. Gerald Fenstermaker, 24 Michigan Avenue, Lancaster, Pa.
- ARROWHEADS TWO ancient obsidian, illustrated catalog plus jumbo picture \$1. Catalog 50c. Indian wampum, very old. Cut shell, turquoise, bone, Spanish and Hudson Bay Trade Beads. List 10c. Worcester, 1229B University Avenue, Berkeley 2, California.
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- SELLING 20,000 Indian relics. 100 nice ancient arrowheads \$25. Indian skull \$25. List free. Lear's, Glenwood, Arkansas.
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- FOUR ARROWHEADS \$1. Three birdpoints \$1. Three flint knives \$2. Three spearheads \$2. Grooved net sinker \$1. Drill, scraper and blunt \$1. Strand trade beads \$1.25. Zuni fetish \$3.75. Navejo wedding basket \$5. Atlatl spearhead (classified) \$1. Paul Summers, Canyon, Texas.
- FINEST RESERVATION-made Zuni, Navajo, Hopi jewelry. Old Pawn, Navajo rugs, Chimayo blankets, baskets, pottery, squaw boots. We appraise, buy and sell Indian jewelry, Navajo rugs and basket collections. Send for brochure. The Indian Room, 1440 South Coast Highway, Laguna Beach, California.
- AUTHENTIC INDIAN jewelry, Navajo rugs, Chimayo blankets, squaw boots. Collector's items. Closed Tuesdays. Pow-Wow Indian Trading Post, 19967 Ventura Blvd., East Woodland Hills, Calif. Open Sundays.
- THREE FINE prehistoric Indian war arrowheads \$1. Flint scalping knife \$1. Rare flint thunderbird \$3. All \$4. Catalog free. Arrowhead, Glenwood. Arkansas.
- INDIAN PHONOGRAPH records, authentic songs and dances, all speeds. Write for latest list: Canyon Records, 834 No. 7th Avenue, Phoenix, 1. Arizona.
- INDIAN ARTIFACTS, mounted horns, buffalo skulls, pottery, Navajo rugs, curios, list free. Thunderbird Trading Post, highway 80 at Brazos River, Millsap, Texas.
- GUARANTEED FINEST birdpoints, 30—\$8.50, 100 —\$26.50. Priced for resale or serious collectors.-Prompt delivery. William Hardy, Box 547, Englewood City 18, New Jersey.

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- UNIQUE LOVELY bracelets of ten different identified gems set flat on untarnishable gilt H.P. mounting. Choice of "Gems of the World" or "Western Gems," \$3 each. Also choker-style necklaces to match, \$3.75 each. Tax, postage included. Bensusan, 8615 Columbia Ave., Sepulveda, California.
- ALUMINUM CHAINS! Dealers, write for wholesale price list on our fabulous line of nontarnishing aluminum chains. Include \$1 for samples postpaid. Please use letterhead or state tax number. R. B. Berry & Company, 5040 Corby Street, Omaha 4, Nebraska.
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- THREE STONE bracelet, earrings, and necklace— \$1.50 each. Tax, postage included. Rock-JewelGems by Theresa, Route 1, Box 56, Campo, California.

TRADING POST CLASSIFIEDS

continued

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. LODGES, MOTELS

- MELODY LANE Apartment Motel, 6259 Adobe Road, P.O. Box 66, Twentynine Palms, California. All electric, air-cooled, trees and patio, opposite post office, near super-market. Day, week or monthly rates.
- ROCK HOUND headquarters: Moqui Motel, Escalante, Utah — on Highway U. 54, phone MArket 4-4210, Dyna and Mohr Christensen. Pack and Jeep Trips by appointment.

· MAPS

- SECTIONIZED COUNTY maps San Bernardino \$3; Riverside \$1; Imperial, small \$1, large \$2; San Diego \$1.25; Inyo \$2.50; Kern \$1.25; other California counties \$1.25 each. Nevada counties \$1 each. Include 4 percent sales tax. Topographic maps of all mapped western areas. Westwide Maps Co., 114 West Third Street, Los Angeles 13, California.
- GHOST TOWN map: big 3x2 feet. California, Arizona and Nevada, with roads marked. Plus Treasure catalogue 100 items. \$1, or American Treasure Hunter's Guide \$2. Foul Anchor Archives, DM, Rye, New York.
- TREASURE MAPS: Texas treasures in color, showing locations of mines, sunken ships buried treasures and old trails. 17"x22", suitable for framing. \$2 postpaid. Rem Productions, P.O. Box 1893, Fort Worth, Texas.
- ROUTE MAP Pacific Crest Trail, 2153 miles Canada to Mexico through 22 National Forests and 6 National Parks in Washington, Oregon and California. 20-page folder \$1. W. Rogers, 2123 South Park Drive, Santa Ana, California.

. MINING

- \$1 FOR gold areas, 25 California counties. Geology, elevations. Pans \$3, \$2.50. Poke \$1. Fred Mark, Box 801, Ojai, California.
- WESTERN MINING News, monthly, for miners, prospectors, claim owners, \$2 per year. Sample copy 25c. Box 787, Sonora, Calif.
- GOLD. HAVE fun panning gold in the manner of the forty-niners. Eight ounces of ready to pan ore from the famous Rose Quartz mine, pan, panning instructions and booklet, "How to Prospect for Gold." Only \$2 postpaid. Order from Rose Quartz D, P.O. Box 5006, San Diego 5, California.
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- BERYLLIUM ASSAYS with gamma-neutron Beryllium analyzer. Presence or absence, \$1. Quantitative BeO, \$6. Boulder Scientific Co., 250 Pearl, Boulder, Colorado.
- WANT PARTNER for prospecting in California gold placer, with truck or jeep. Have dry washer and all equipment. Walter Painter, 1991 Stanley, Long Beach, California.

PHOTO SUPPLIES

- WILDLIFE OF Alaska, color, 16 or 18 mm. movies, 35 mm. slides, walrus, sheep, caribou, moose, goat, bear, glaciers, Lake George Breakup, wildflowers, small animals, birds, sport fishing & Eskimo dances. Elmer & Lupe King, Alaska Film, Box 5621, Mt. View, Alaska.
- MOVIE TITLES 8-16 mm., glowing sunset, "The Ends" 96c. World-wide stock shots. Walt Foster, Box 2977, San Diego, Calif.
- BEAUTIFUL COLOR photos of minerals, crystals and fossils, $31/2 \times 51/2$ postcards, 25 different kinds. Set of 25 different cards \$1.25 plus 16c postage. R. Pickens, 610 North Martin Avenue, Waukegan, Illinois.
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• PLANTS, SEEDS

- WILDFLOWERS SEEDS: New catalog offers over 600 different kinds of wildflower and wild tree seeds. Catalog 50c. Clyde Robin, Carmel Valley, California.
- CACTUS AND Succulents: Eight of these exotic plants from the deserts of the world. \$2 post-paid. G. Robert Meyers, Box 521, Vista, Cal.
- ROSSO'S CACTUS Nursery, 25399 Highway 99, Loma Linda, California, between Colton and Redlands. See the largest variety in the world.
- CHIA AS featured in article, "Hot Cakes and Chia" for sale-limited quantity, \$7.50 lb. Inquiries to Bruce Gregory, Box 147, French Camp, California.
- GROW GIANT Saguaro Cactus in your home in 7 days, planter soil, seeds, \$1.25, guaranteed, prepaid. 1914 East 18th Street, Tucson, Ariz.

• REAL ESTATE

- FOR SALE: Two-bedroom furnished home, onebedroom furnished rental, both air conditioned. Five 30x100-foot lots, choice location. Edward G. Robinson, Box 183, Beatty, Nevada.
- TRAILER SITES five minutes from downtown Redlands, low as \$1190 with just \$90 down, \$19 per month. Pon & Company, Box 546D, Azusa, California.

- \$1800 CASH: Four rooms partly furnished, nice and clean inside and out, garage, large lot all fenced, on deeded land. Viola Peshak, P.O. Box 292, Randsburg, California.
- 40 ACRES: Lanfair Valley, San Barnardino County, California. Section 23-13N-16E, level, many joshua frees. Bargain at \$2995. \$50 down, \$40 month. Owner, Henion, P.O. Box 5216, Pasadena, California.
- FOR SALE: 120 acres in Rio Grande National Forest, Colorado, Good location for hunting—fishing lodge, elk, deer, bear country, good trout stream, and timber on property. If interested, write: Mrs. E. Wetherill, Creede, Colorado.
- 50 ACRES only three miles from city of Coachella in Coachella Valley, Sacrifice at \$5000, Write to: Don Bleitz, 1001 N. McCadden, Los Angeles 38, Calif.
- LAND LIQUIDATION. Write for complete list of parcels to be liquidated in San Bernardino, Kern, Imperial counties. Five acres to section. Robert L. Shaw, Wholesale land broker, 5034 Verdun Avenue, Los Angeles 43.
- CHOICE 626 acres on Dillon Road, few miles from Desert Hot Springs, California; \$275 per acre. Write Ronald L. Johnson, Thermal, Cal.
- 80 ACRES near Lockhart, level, \$125 acre, 25% down. 20 acres Highway 395, level, north of Adelanto, \$150 acre, 10% down. 2½ acres west of Adelanto, level, \$1495, 10% down. 2½ acres Lancaster on paved highway, shallow water, level, \$2495, 10% down. Dr. Dodge, 1804 Lincoln Blvd., Venice, Calif.
- NEAR LAKE Isabella, 2½ acre lots in scenic, green, fertile, tranquit Kelso Valley, \$2950 at \$50 down, \$35 per month, or \$2500 for cash. Call or write for free brochure. Salesman on premises on weekends. Weldon Valley Ranchos, 2441 E. Locust Ave., Orange, Calif. Kelloag 2-1361.
- CMOICE 207 acres, six miles north of Inyokern on old Highway 395. 160 acres fenced, 110 acres in alfalfa, yield 1½ to 2 ton per acre, seven cuttings year. 1200 gpm well. Completely equipped. Also nice home. Make offer. L. P. Soulsburg. Dueleburg Farms, Route 1, Box 20, Inyokern, California.
- RARE OPPORTUNITY for a wilderness retreat. Nevada's famed mining districts. Your own patented mining claims \$150 up. Excellent terms. Full surface and mineral rights. Great Basin Prospects, 2740 11th, Sparks, Nevada.
- FOR INFORMATION on desert acreage and parcels for sale in or near Twentynine Palms, please write Silas S. Stanley, Realtor, 73644 Twentynine Palms Highway, Twentynine Palms, California.
- FOR SALE: Rock shop and Indian trading post, Los Angeles area, established five years, splendid location, fully equipped, 31 machines. Must sell due to ill health. Sell all or part. \$6000 full price. \$3000 will handle. Box MT, c/o Desert Magazine, Palm Desert, Calif.

WESTERN MERCHANDISE

FOR SALE: My collection of sun colored glass, antiques and unusual pieces. Mrs. A. E. Wyckoff, 11501 Davenport Road, Auga Dulce, Cal.

CLASSIFIEDS

-continued

GOLD SCALES and other antique items from early California gold period. Excellent condition. Extra fancy quartz crystals with colorful phantoms and inclusions, for advanced collectors. Call or write for appointment. Paradise Gems, 6676 Paragalia Way, Paradise, California.

DESERT TREASURES, primitive relics, purple glass, gem stones, paintings, rock trips, information on Last Chance Canyon. Visit Roberta's in the ghost town of Garlock, 12 miles east of Red Rock Canyon Highway 6, via Randsburg road, or 8 miles west of Randsburg and Highway 395. Mail inquiries answered. Roberta's, Box C, Randsburg, California.

GHOST TOWN items: Sun-colored glass, amethyst to royal purple; ghost railroads materials, tickets; limited odd items from camps of the '60s. Write your interest—Box 64-D, Smith, Nevade.

• MISCELLANEOUS

BOOKKEEPING SIMPLIFIED: Conforms to all federal and state tax law requirements. Complete with instructions, \$4.95. Mott Distributors, P.O. Box 602, Lovelock, Nevada.

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FANTASTIC INTRODUCTORY sale: Finest precision quality 8x30 center focus prism binoculars with hard coated lenses, fine leather case and shoulder straps. Special offer, below usual dealer's cost. Regularly \$43.50. Limited time, only \$24.95—30 day money back guarantee. We pay the 10% F.E.T. and shipping. Rush check or money order today. Lorbro Products Company, 406D Walnut Street, Alexandria, Ind.

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GOLD COINS for profitable safe investment. They make good gifts, too. Buy any amount, \$5.75 to \$10,000. I import U.S. \$5, \$10, \$20 and English and Swiss coins, and deliver to your bank before you pay. For details write: Loyd Parker, 4606 Austin, Houston 4, Texas.

EARTHWORMS, LUSH gardens, fine lawns, good bait, Send \$1 for instructions and 200 PA.X garden and bait worms. Large California native crawlers \$3.50 per 100. Patton Worm Farms, Highland, California.

DELVERS GEM and Mineral Society will present "Diggings of the Delvers" October 1 and 2, Auditorium, Simms Perk, 16614 South Clark, Bellflower, California, Saturday 10:00 a.m. to 10:00 p.m., Sunday 10:00 a.m. to 7:00 p.m. Admission free.

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NEW BOOKS

HANDBOOK FOR AMATEUR PLACER GOLD MINERS

The amateur gold-seeker will enjoy the little 24-page paperback booklet titled; Diving and Digging for Gold. The work deals with placer mining only, detailing the use of gold pans and riffle boxes.

The booklet, which sells for 75 cents, tells how to find placer gold, where to look for it, and what to do with it—when or if you get any of it. Prepared by the Pages of History publishing company, the book is well illustrated. See below for details on how to purchase this book through the mails.

A COMPILATION OF GRAND CANYON IMPRESSIONS

Everyone agrees that the Grand Canyon defies description—but in the 420 years since 1540 when Don Garcia Lopes de Cardenas and his dozen Spanish companions were the first white men to view the Colorado River chasm, hundreds of thousands of mortals have tried to sketch with words the grandeur they had witnessed.

Benjamin J. Kimber, publisher of the Roadrunner Guidebooks, has gathered together in an attractive paperbound book some half-a-hundred pages of comments and descriptive paragraphs written by explorers, authors and scientists who have been impressed to words by the Grand Canyon. The compilation is entitled Grand Canyon Deeps, and is richly illustrated with both photos and line drawings. Maps, references, a description of an Easter Sunrise service at Grand Canyon, and a brief question and answer section expand the booklet to 64 pages.

Some of the men who are quoted are J. B. Priestley, Theodore Roosevelt, John Wesley Powell, Barry Goldwater, Ellsworth L. Kolb, Edwin Corle, Lt. Joseph Ives, John Muir, John Burroughs and Joseph Wood Krutch.

Those who have enjoyed Grand Canyon will find *Grand Canyon Deeps* interesting and inspirational. The book sells for \$1.50 from the Desert Magazine Book Store (see footnote).

*

Books reviewed on this page can be purchased by mail from Desert Magazine Book Store, Paim Desert, California, Please add 15c for postage and handling per book. California residents also add 4% sales tax. Write for free book catalog.



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To:

CUIDE TO

By HELEN DuSHANE

MEXICALI

THE JESUITS were the first Christian missionaries to gain a foothold in the lonely grandeur that is Baja California. They landed at present-day Loreto in 1697 with a few cows, pigs and chickens, and a great store of Jesuit zeal. Padre Juan Maria Salvatierra was the guiding spirit in this expedition which went on to establish a mission system that has evoked the admiration of historians past and present. For 70 years the Black Robes toiled in the midst of privation and hardship to leave the word of God with the Indians. They supervised the building of 21 missions and many visitas in the vicinity of Loreto, south around the tip of the peninsula and north along the coast of El Gulfo de California.

Partly because they toiled in innocence and partly because news from Europe came but rarely to so remote a part of the world, the Jesuits were astonished when they learned that enemies at home were playing politics behind their backs. In 1767 came the famous decree by King Charles III of Spain expelling the Jesuits from the New World. History tends to indicate that jealousy on the part of people in Spain, fearing the Jesuits were developing too much power with the throne, and that they were becoming wealthy from concealed sources of revenue from mines and pearling, promulgated the unhappy decree. Be that as it may, there was no recourse. The Jesuits gathered at Loreto and sailed for the mainland, a disheartened and dispossessed group of men.

The Franciscans took over from the Jesuits. They arrived in Baja California in 1769, and during their brief tenure (five years) the course of missionary development changed. The peninsula missions became steppingstones for the advancement of Spanish control northward to Monterey. Long Jesuit contact had modified Indian culture, and the Franciscans' problem was one primarily of maintaining control. They established only one mission to bridge the gap between the central portion of Baja California and the southern part of Alta California. In 1773



MISSIC

ONE OF SEVERAL BELLS AT SAN XAVIER

IS OF BAJA CALIFORNIA

they were officially released from responsibility toward the Lower California missions to concentrate their attention on Upper California.

In 1773, 18 Dominicans came from Spain to maintain control of the Baja California missions. Since they left few written records, the impression is gained that they were not in accord with this harsh and strange land. However, during their 82 years of residency, they did establish nine missions, mostly in the northern portion of the

Political upheaval on the mainland brewed the Decree of Secularization followed in 1825 by a Reglamento which aimed at the secularization of all missionary establishments in Baja California. The new plan worked well — on paper. The Dominicans were replaced by hired administrators, and mission lands were divided

among the In-

dians. In

short, the

mission-

As early as 1697 the Jesuits collected considerable sums of money, known as The Pious Fund, for the establishment of missions in all of the Californias. In 1842, long after the Jesuit expulsion, a decree was passed in Mexico City incorporating the properties of The Pious Fund into the national treasury. Twenty-four years later Catholic authorities representing the northern missions (now in the United States) put in a claim for their share of the Fund. Mexico balked, and in 1902 the case became the first ever decided by the Tribunal of Arbitration at The Hague. It was decreed that Mexico owed the California Church \$1,420,000 in accrued interest plus \$43,000 annually to be paid "in perpetuity." The California Church got the million-plus dollars, but the \$43,000 interest payments have fallen hopelessly in arrears.

Today there are only four or five resident priests in Baja California south of the big population centers on the U.S. border. No money is being spent for restoration or maintenance of the old missions.

THE JESUIT MISSIONS 1697-1767

The Jesuit missions represent a bold adventure into a little-known land. They capture a spirit of turbulence associated with Spain's reign in the New World. The Indians were not as willing to become converts as some historians would have us believe.

NUESTRA SENORA DE LORETO—1697—Baja
California's first mission is located in the neat, clean and quiet pueblito of Loreto in the southern-end of the peninsula on the Gulf Coast. The mission is in the heart of town, dominating the village. A large church, but narrow for its length, the stone walls are five feet thick. This feature indents the doors and woods barred

a ries became parish
priests confining
themselves to the spiritual needs of the Indios.
But, the unhappy Indians
gradually forsook the environment of the mission farming centers
and took to the hills. Epidemics, introduced by the white men, continued to
ravage the ranks of the Indians and by 1850
only a handful remained near the missions. It
is estimated that in 1769 there were more than
10,000 Indians in Baja California; by 1857 not quite
2000 remained.

0

BAJA CALIFORNIA

MISSIONS

Dominican

Franciscan

Jesuit



THE ONE-TOWER OF SANTA ROSA DE TODOS SANTOS IS TYPICAL OF EARLY COLONIAL ARCHITECTURE. EXTERIOR LADDER IS USED TO REACH THE TOWER'S FIRST LEVEL, FROM WHICH OTHER LADDERS LEAD TO HEIGHTS ABOVE.

windows, giving the edifice a solid appearance. The hand-hewn cedar timbers were cut and dragged down from the mountains by oxen. A narrow stairway leads through the choir loft and up to the bell tower whose bells are worn thin at the rim surfaces. They bear the date 1743. Originally, the altar was lavish with silver candelabra and a golden chalice. The statue of the Virgin was clothed in silks, lace and a tiara of pearls. Most of the ornamentation has been removed and today Loreto Mission is but a shell. However, it still retains an aura of historical significance and is well worth visiting.

SAN FRANCISCO XAVIER DE VIGGE—1698—In a narrow canyon inland from Loreto the Jesuits Picolo and Ugarte established the second and perhaps the most famous of the missions. Other missions have had reconstruction, rehabilitation and restoration until one wonders how much of the original remains. Not so with Xavier. It stands today as it has since it was built. Spectacular sheer black lava-cliffs rising hundreds of feet form a backdrop for the Moorish-Romanesque style mission buildings. The white dome of the bell-tower offers stark relief against the somber heights of La Sierra Giganta.

To the north, east and west great double doorways open into the mission. The north doorway has "1751" cut into its stone archway, undoubtedly the date when the church was completed. The interior of the mission is vaultlike but well-lighted by Baja California's first glass windows. The three gold-leaf altars were shipped in 32 crates from Mexico and reassembled. In the center of the main altar stands a life-size statue of San Francisco Xavier. Bending forward slightly, as if to place his benediction upon all who enter, he is surrounded by eight life-size oil paintings. The side-altars each have heavy gilt frames for six smaller paintings. It has been said that each painting is worth \$10,000. The east altar was descrated of four paintings, but the statues from Spain and the Stations of the Cross are intact.

The mission had a library of several hundred volumes, and artisans were brought here from Spain to teach weaving and wood-carving to the Xavier *Indios*. This mission probably attained a degree of culture far in advance of most others on the peninsula. Xavier was always fortunate in having a resident priest of exceptional vigor and culture.

Because of its excellent workmanship, San Xavier has withstood the ravages of time better than the other missions. Few travelers go out of their way to visit here. Until such time that an engineered road reaches this spot, the mission will stand aloof and alone, guarded by the sheer lava walls and the handful of natives who do not realize what historical wealth they possess. Although the road to it is rocky and somewhat dangerous, it is the most desirable of the missions to visit.

SAN JUAN LONDO—1699—Situated a few miles north of Loreto on the Gulf, this was the first visita established in Baja California. (A visita is a visiting station and not a true mission although sometimes included in historians' lists because services were held for the Indians at these place.) No vestige of the early building remains.

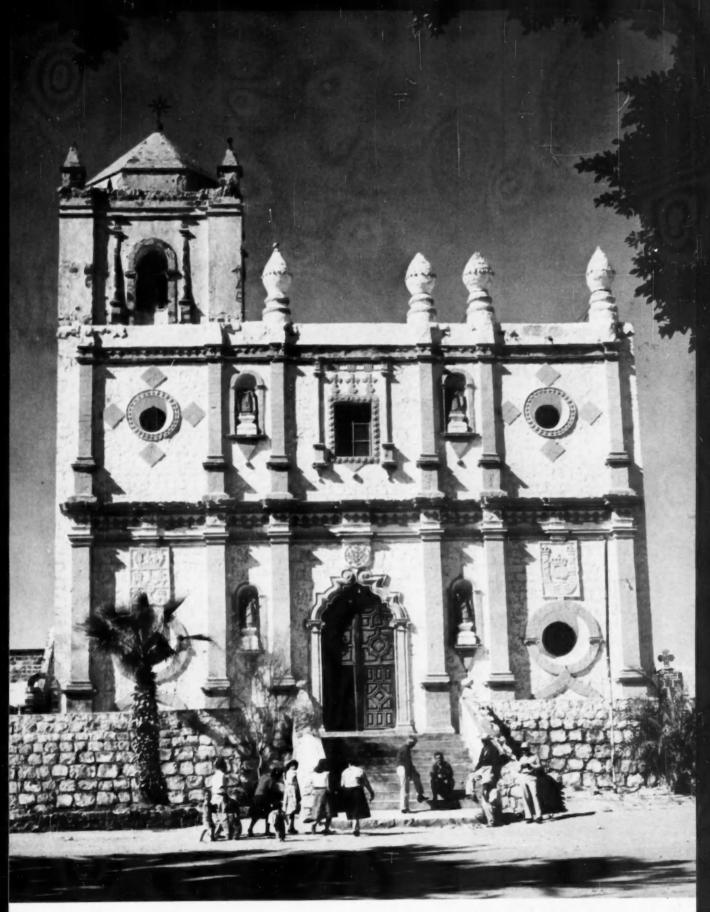
SAN JUAN BAUTISTA MALIBAT O LIGUI—1705— This small mission was established on the Gulf coast south of Loreto. Because of epidemics and repeated attacks from the Gulf Island Indians, the natives were finally removed in 1721 to a more southerly mission, Nuestra Senora Dolores del Sur, and Ligui ceased to

SANTA ROSALIA DE MULEGE — 1705 — Situated a short distance west of the Gulf on a most lush and beautiful section of the peninsula, the partially whitewashed mission of Moorish architectural influence is built on an eminence with the pueblito of Mulege at its feet. The sturdy lava-rock construction is cemented together by a mixture of lime and sand. It is said the precise directions for making this mixture have been lost, but the ancient lime kiln still stands behind the mission, its rotund brown belly looking like that of a very fat friar.

At Mulege, in 1721, Padre Ugarte had his famous bark, *Triunfo de la Cruz*, built by native labor. This boat carried him and his crew on a voyage of exploration to the mouth of the Colorado River. There he discovered that California was not an island as had been thought earlier.

A resident priest is eager to show turistas through

SAN IGNACIO DE LOYOLA DE KADAKAAMAN IS THE MOST PHOTO-GRAPHED AND—IN THE OPINION OF THE AUTHOR—THE MOST BEAUTI-FUL MISSION IN BAJA CALIFORNIA. SAN IGNACIO SHOWS ITS MOORISH ARCHITECTURAL INFLUENCE IN THE TURRETS ATOP THE COPING



the enormous structure of church, courtyard and priest's dwelling. This mission is a must for the travelers who like their missions in a tropical paradise.

SAN JOSE COMONDU—1708—Halfway between the Pacific Ocean and the Gulf, the mission is built in a deep canyon on whose narrow floor is massed a bewildering array of semi-tropical fruits and flowering trees. The mission is severely plain on the outside and hardly less so inside. It is a dim, mysterious and mouldy little place of mud-plastered walls and scant elegance. It is as if all the gold and gawdiness and fervor had gone out with the snuffed candlelight when the priests left. A cracked holy water font of onyx lay tipped on its side when I entered this church on my last visit. Except for its natural setting and the fact it is on the Camino Real, the mission has little to offer the traveler.

San Miguel—1714—Although listed as a mission by some historians, this was a visita created by Ugarte after a severe drouth burned his corn fields at nearby San Xavier. It was never more than a ramada for shelter and prayer in a side-canyon close to the main mission.

LA PURISIMA CONCEPCION DE CADEGOMO — 1718—In the heart of the sierra along the banks of



FROM THE ROOF OF SAN XAVIER, LOOKING DOWN ON VIGGE'S ONLY STREET

the Cadegomo arroyo the Jesuits built a sturdy mission with stone facade. Water was plentiful, many crops were raised and much cattle roamed the countryside. With time, the thatched roof has fallen in. The sidewalls, too tired to carry on, sag heavily. The rectangular doorway and lintel still support two pedestals between which is the Catholic insignia in bas-relief. The road to Cadegomo is treacherously rocky. Except for the beauty of its site, there is little to see today.

NUESTRA SENORA DE GUADALUPE DE HUASI-NAPI — 1720 — Northwest and inland from Mulege this small mission was established as a steppingstone to the northern missions. Plagued by locusts, the mission was never able to raise enough crops to support itself, and in 1795 it was closed. From this site came the timbers for the first ship built in California, Ugarte's Triunfo de la Cruz, which carried him to the northern reaches of the Gulf. At one time this mission had three Visitas, Concepcion, San Miguel and San Pedro y San Pablo.

NUESTRA SENORA DEL PILAR DE LA PAZ-1720 -Situated in what is now the quiet little city of La Paz, the original mission was abandoned before 1768 because there were not enough natives to justify maintaining it any longer. The present pink mission (built in 1865) faces the plaza and the Governor's Palace and dominates the scene today. Although it is a very young mission, it is so accessible no Baja California traveler should miss it. An interesting little story is associated with this mission. The Reglamento of 1825 decreed that no priest should appear in public wearing a habit. One day the local padre broke the decree while on an errand and was promptly placed in jail. The good ladies of La Paz immediately brought their forces to focus on the problem by prostrating themselves in the street in front of the church. They refused to budge until the priest was released!

NUESTRA SENORA DE LOS DOLORES DEL SUR— 1721—Situated along the southern shores of the Gulf, Mission Dolores del Sur remains today in name only. A monthly ship from La Paz supplies the needs of a few families. No traversable road leads to the site.

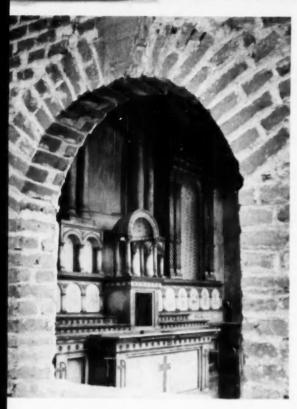
SANTIAGO DE LOS CORAS—1723—Located at the end of the peninsula, the adobe walls of this mission are melting back into the earth from whence they came. Perhaps it is just as well for this spot marks the place where the belligerent Pericue Indians attacked Father Carranco, beat him to death and then burned his body. Nothing is left to show the viciousness of the attack; today the countryside is peaceful and wide with an occasional pink adobe marking the site of a lonely ranchito.

SAN IGNACIO DE LOYOLA DE KADAKAAMAN—

1728—In the center of the peninsula, on the Camino Real, this mission village lies in a well-watered canyon. Hidden by tall palms, the twin spires of the mission reach for the sky. The Moorish building is a pink and white confection that looks good enough to eat—the more so because of its tropical setting. The villagers are inordinately proud of their mission. Of cut lavarock with walls four feet thick and a stupendous stone arched ceiling, its preservation reflects their loving care. It is still used daily. The most photographed mission on the peninsula, I believe it is also the most beautiful.

DOLORES DEL NORTE—1728—Situated just north of San Ignacio and with no road leading to it, the mission is in ruins.

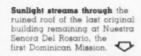
SAN JOSE DEL CABO-1730-Baja California's most



The original altar at Descanso as it appears today. Mission church was built in 1817, 31 miles south of Tijuana.

La Sierra Giganta forms a bleak backdrop for San

Xavier Mission, the most remote and inaccessible of the peninsula missions.

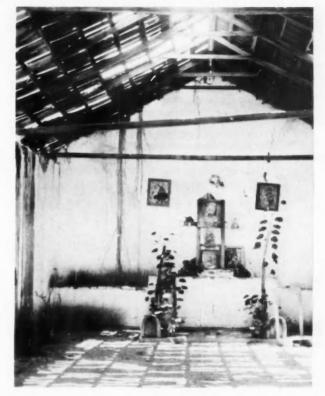














southerly mission is located in the *pueblito* of the same name. Ravaged time and again by *chubascos* (Gulf storms), it has been rebuilt many times. The long narrow building is supported by buttressed side-columns. The facade is broken only by the stone-faced doorway and an arched bell tower with niches for three bells. With its mild climate and fresh-water *estero*, the hilly terrain is an ideal setting for this lovely mission.

SANTA ROSA DE TODOS SANTOS-1735-Built in a garden spot of towering mango and avocado trees on the Pacific side of the peninsula, this magnificent mission appears today much as it did when the Jesuits erected it. The mission is in the center of a thriving community. Roses and various foliage plants, enclosed by a tile wall, make the entrance to this mission most inviting. This is a well-kept edifice, with services held regularly at the ringing of its original bells. It has been "restored" with a clock on the bell tower-an unfortunate defacement of the simplicity and beauty of the tower. Whitewashed, and with a tile roof, the building reflects the care it has had. Its lovely interior has a pale nave and much gold-leaf on the wooden statues. The square-tiled floor is worn rough from the feet of many devout Catholics.

SAN LUIS GONZAGA—1737—Placed in the center of the lower-third of the peninsula, for many years this mission was home to the Jesuit Johann Jakob Baegart. From here he sent letters to his brother in Germany which proved to be a valuable source of information to future historians. Oddly, this is the only Jesuit mission with two bell towers. The church today looks very much as it did when built except for the removal of the bells from the towers. The facade has been whitewashed, offering a pleasing contrast to the raw lava and limestone construction of the remainder of the church. This mission is difficult to reach but is worth the effort because of its historical significance and fine state of repair.

SANTA GERTRUDIS—1752—This mission is in the center of the peninsula in a canyon so narrow that a shelf of earth had to be laid on which to erect the stone church. The first wine made in the Californias was fermented here in huge stone vats. A few palm trees cast shade on the walls of the tiny chapel, its ruined outbuildings and reservoir.

SAN FRANCISCO DE BORJA—1759—Inland from the Gulf is this weather-worn mission with a pock-marked facade of tufa. The Duchess de Borgia made the original endowment for this church, with the stipulation that it be placed in an isolated location. The mission was never completed. The local Indians were treacherous and the last padre lost his life when a Cochimi dropped a boulder on his head. Located against the side-wall of a mesa, Borja is well worth a visit if only to admire its massive hand-hewn timbers and stone ceiling. In the belfry swing two copper bells.

CALAMAGUE—1766—On the Gulf side, this mission is one about which there is speculation and wonder. Why did the persevering and usually discerning Jesuits choose such an unlikely spot? The water's alkalinity made it unfit to drink or to irrigate crops. A few lumps of adobe show where the mission once stood.

SANTA MARIA DE LOS ANGELES — 1767 — Inland from the Gulf, this last Jesuit mission is the only one built of both adobe and stone. Isolated little Santa Maria has been prey to treasure seekers ever since a bajanero uncovered an olla of gold pieces while resting in the shade of its walls. Built in loneliness and sur-



Two modern Baja California churches are pictured on these facing pages. At the left is the church at El Triunfo. The town was a prosperous silver producer a century ago, but today it is almost a ghost town. At the right is the new church at Santiago. Little is left of the original Santiago De Los Coras Mission where the Pericue Indians killed the padre.

rounded by more of the same, the ruins of this aloof mission offer little reason for being visited.

THE FRANCISCAN MISSION 1769-1773

The Franciscan order built but one mission in Lower California. The padres arrived with orders to maintain old missions and establish new ones to serve as supply points for those further north.

SAN FERNANDO DE VELICATA — 1769 — The lone Franciscan mission is situated inland in the northern-third of the peninsula. It overlooks a cienega a quarter-of-a-mile long with willows and rushes crowding its margins. It was here that Father Serra rested and gathered strength to fulfill his dream of a chain of missions northward in Alta California. Although we are told the church faced the southwest, it is extremely difficult now to trace the outlines of the disheveled old walls. The only remnant worthy of note at Velicata is the stone-lined irrigation ditch.

THE DOMINICAN MISSIONS 1773-1854

Since the Dominicans left few written records, and did

not trouble to roof their missions with baked-tile, one cannot help but have the impression that their hearts were not in accord with their instructions to "build enduringly." Loss of the rush roofs invariably spelled ruin to their missions, for their adobe contained no bitumen to turn the



rain. Of the nine missions erected by the Dominicans, only enough remains of two to make visits to them worthwhile.

NUESTRA SENORA DEL ROSARIO-1774-The first mission established by this order is located near the Pacific coast. Fertile river bottom fields are glimpsed through great holes in the mission walls, situated on a bank overlooking the broad watercourse. One decrepit building, with the sun streaming through holes in the roof, houses a few insignificant trivia of Catholicism. The outlines of what must once have been a great central plaza are still discernible. The cemetario is of interest. The faded paper-mache garlands on the adobe tombs testify to continued interest on the part of the local residents. The loyal have contributed to a fund with which they have built a small modern church, the original mission bells hanging alongside it. One bell is missing-sold to the tiny parish of San Ysidro, northeast of San Diego, when the pueblito was in financial difficulty. There is no resident priest.

SANTO DOMINGO—1775—In a tiny canyon with vertical cliffs stands this ruined mission. Thirty years ago the buildings were intact, with drawnwork altar cloths and wooden saints, just as the Dominicans had left them. The bells hung from a wooden crosspiece in front of the mission. The faithful had a superstition

that as long as the bells were there, peace and health would dwell in their tiny *pueblito*. One night in 1930 the bells were stolen. Immediately, several of the older residents fell ill and some even died. Today, the stilluseful adobe corral and a small chapel may be seen.

Visiting the *cemetario* we discovered a new headstone, that of an old friend, Antonio Martorel, who knew not when he had been born beyond the fact that he was *ochenta mas*—"more than eighty." Whether by accident or ignorance, the headstone had "1965" carved on it. Time means so little to these people one can only be left to wonder if the stone cutter had really thought it was the year 1965.

This is a mission to visit if only to share with the friendly people the feeling of serenity present in the remote little canyon.

SAN VICENTE FERRER—1780—In northern Baja California stand the roofless walls of this mission. This was one of several areas where the Indians were particularly belligerent, although the Mexicans one meets here now are friendly and cooperative. Only those who are interested in visiting all possible sites will want to see this one.

SANTO TOMAS DE AQUINO—1794—The mission site is on the far side of a broad valley a short distance south of Ensenada. Tall palms whisper in the breeze as if trying to tell secrets of past life here. The tumbled earthen walls of a small outbuilding overlook a vineyard whose fruits have established the Vino de Santo Tomas as a repeated gold-ribbon winner in Spain. So even now the farsightedness of the early priests give work to many bajaneros.

SAN PEDRO MARTYR DE VERONA—1794—Situated on the huge backbone of the Sierra de San Pedro Martyr, whose peaks reach 10,000 feet into the sky, is the site of this mission. It is accessible only on muleback and very little remains to appeal to a traveler.

SANTA CATARINA MARTYR — 1797 — Deep in the heart of the Sierra de Juarez stands a low ridge of adobe—all that remains of this mission. A handful of Santa Catarina Indians live at a rancheria close by, grateful for the ministrations of a priest who comes here once every two years.

SAN MIGUEL FRONTERIZA—1817—In the northern section of Baja California, on the brink of a gaping canyon, is the site of what was once a flourishing mission. The melting adobe walls can be seen as one climbs the grade from the canyon bottom on the road to Ensenada.

DESCANSO—1817—This mission is only 31 miles south of Tijuana. It is in a small valley just left of the Camino Real. It has the unique distinction of having had what appears to be a fort on a nearby hilltop. The mission buildings have been in ruins for years. Recently the local people have taken an interest, and bit by bit, as time and money permit, the old building is being rebuilt. Fortunately, the original altar has been preserved with all the beauty of aged wood and faded blue paint. The surrounding grounds are pitted with the holes of treasure seekers and archeologists.

GUADALUPE—1834—In a broad valley at the northern end of the peninsula is the site of the last Dominican mission. It is odd that the most recent mission leaves absolutely nothing for the traveler to see. A few bedrock mortars indicate where most of the *Indios* had their rancheria from which the good fathers drew their neophytes.



A LOOP TRIP ALONG THE RIO GRANDE . . .

By W. THETFORD LeVINESS

Desert Magazine's New Mexico Travel Correspondent



Two INDIAN villages, a Spanish-colonial plaza, four old missions, and an international boundary are all along a scenic 120-mile loop drive that begins and ends at Las Cruces, New Mexico. Travelers on U.S. 70 between Deming and Alamogordo can make the round trip easily in a day, with a stopover for lunch in Mexico.

Las Cruces, on U.S. 70-80-85, has its fine

old Amador Hotel, of ranch-style construction, with an inner balcony around its lobby and bright serapes hanging over the railings. There is a balcony entrance to each room, with the Spanish name of a girl above it—Dolores, Mercedes, Rita, for example. The Amador family, prominent in New Mexico from colonial times, built it as a stagecoach stop in the 1850s. Many of its original furnishings are still there — rugs, writing desks, ebony statuary; these pieces were brought from the East by "prairie schooner" over the Santa Fe Trail. With so much that is Spanish and so much that is "Anglo," this venerable hostelry is an appropriate starting point for a one-day binational tour.

The loop drive follows New Mexico's State Route 28 south to old Mesilla plaza, where the Gadsden Purchase was signed in 1853. This quiet little park is now a state monument, with a movement underway to restore its middle-of-the-last-century charm. Several old buildings facing the plaza include a church, a few homes converted into art galleries, and a well-stocked-with-shooting-irons Billy-the-Kid Museum.

Route 28, paved all the way, crosses the Rio Grande and continues past several small farming villages in a rich cotton-producing section of New Mexico. (At one tiny crossroads, La Union, an Episcopal church is affectionately dubbed "St. Luke's-in-the-Cottonpatch!") The route crosses the river again, this time to its termination in the northwestern sector of El Paso, Texas. From there it's only a 10-minute drive to a third Rio Grande crossing—the international toll bridge to Ciudad Juarez, Mexico.

"Ciudad Juarez" means "Juarez City." It's Mexico's largest border town, the second largest city in Chihuahua state. Amid hundreds of honky-tonks and street markets are many decent up-to-date restaurants serving Mexican and American food, and some very fine stores. A new cathedral occupies the same rocky eminence as Our Lady of Guadalupe Mission, built in 1659. The recent building is usually open, and a sexton will unlock the doors of the old structure—for a fee.

Out on the road to Chihuahua City, past myriads of auto courts and a flashy new bull ring, the loop drive turns south down the west bank of the river to Zaragosa. This is a charming Mexican village with no "tourist traps"; near its beautiful little plaza, a primitive museum houses remains of a mastodon — the building is erected around the fossils which were never removed from the site.

Opposite Zaragosa is Ysleta, Texas; the free bridge across the river has immigration and customs inspection at the U.S. end. There's another old mission at Ysleta, built in 1681-83 for Indians who remained loyal and fled New Mexico with the Spaniards during the Pueblo Rebellion. You can still see remnants of their old pueblo, much-Hispanicized, near the church. Two other missions of the same vintage are near U.S. 80, the route back to El Paso—they are at Socorro and San Elizario, Spanish-style placitas in Texas.

U.S. 80 traverses miles of cotton farms east of the Rio Grande, and passes Tortugas, the only Indian pueblo in southern New Mexico. Between there and Las Cruces is University Park—and the campus of New Mexico State University.

September is an ideal month to make this international loop drive. Up north in New Mexico at this time are several events of interest to tourists. The Santa Fe fiestas will take place this year September 2-5, Labor Day weekend. Three Indian pueblos have September feast-days with appropriate ceremonies—Acoma September 2, Laguna September 19, and Taos September 30. The Jicarilla Apaches hold their annual four-day encampment on the shores of Horse Lake, off State Route 17 south of Dulce. September 12-15. A colorful Spanish fiesta, replete with religious processions and dances by Matachines, will be held September 29 at Socorro, site of a church believed to have been built before 1629.



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By RANDALL HENDERSON

THE BATTLE between those who would conserve and those who would destroy for a profit goes on and on with increasing intensity as the natural resources of our land are depleted.

The latest skirmish in this never-ending conflict, insofar as the Southwest is concerned, involves one of the most distinctive of the desert trees, with only a limited habitat in southeastern California and southwestern Arizona. I refer to the ironwood (Olneya tesota). Its common name derives from the hardness of its wood. It is one of the two hardwoods in the tree world which will not float on water. It grows along the dry water-courses, and it's a flowering tree with pinkish blossoms.

Some months ago the U.S. Bureau of Land Management issued permits for the harvesting of the tree for commercial purposes. Three permits were granted for converting the wood to charcoal, and one permit for trucking it across the border to Mexicali for firewood. The permits specified "deadwood," but to desert people the grotesque trunks of lifeless trees are no less an attractive aspect of the desert landscape than is the new growth. Actually, it is not always possible to distinguish deadwood from living trunks. It is commonplace to see vigorous new branches growing from what appear to be dead stumps. The massive root system has a long life.

But I can report with confidence that the destruction of these trees is about to be stopped—thanks to the initiative of the Imperial county supervisors and the Desert Protective Council. And I should include a vote of thanks to a very cooperative federal official. Recently I attended a meeting in which supervisors from Imperial and Riverside counties and Desert Protective Council representatives met with Virgil L. Bottini, Southern California range manager for the Bureau of Land Management.

Mr. Bottini stated that Uncle Sam receives very little royalty—\$1 a cord—from the harvesting of the wood, and that renewal of the existing permits which expired August 1 is being held in abeyance awaiting an expression of the local people in this area. He made it clear that if the people of the two counties—which are the principal habitat of the tree—make their opposition known through their supervisors, the permits will not be renewed. I have no doubt the supervisors will cooperate, for they well know that desert dwellers are opposed to having the desert stripped of its sparse verdure.

After the Democrats and Republicans have solved the major problems of the U.S.A.—as they have pledged to do in the party platforms adopted this summer—I

wish they would turn their attention to some other less spectacular legislation.

For instance, since Woodrow Wilson signed the National Park Act in 1916 there has been continuous conflict between the Forestry Service and the National Park Service as to the use of public lands for recreational purposes. Horace M. Albright, former director of the Park Service, recently wrote: "The Forest Service has, with minor exceptions, always resisted release of any lands to the Park Service, even reluctantly yielding Grand Canyon in 1919 after years of controversy. The Forest Service even attempted to prevent the creation of the National Park Service in 1915 and 1916."

This is the same kind of inter-departmental feuding which goes on constantly between the three branches of the armed services—a conflict in which the public is always the loser. Originally, both Forestry and Parks were in the Interior Department. But in 1905 Forestry was shifted over to the Department of Agriculture, while Parks remain in the Department of the Interior—and thus the way was paved for a bureaucratic hassle which goes on and on.

I would not predict the outcome of the November election but I hope we get a President with the fortitude to knock some cabinet heads together and stop this interdepartmental sniping. We are going to need more national parks for increasing millions of Americans in the years ahead, and the agency best qualified to provide these facilities is the National Park Service.

Late August and September often bring storms of cloudburst proportions to many parts of the Desert Southwest. Folks who haven't seen a storm flood raging down through a desert canyon have missed a scene that is both fascinating and terrifying. Trees are swept away, precipitous walls are undermined and disappear in the angry waters—and the rumble of boulder on boulder as they are tumbled along by the irresistible power of the torrent is almost deafening at times. The entire landscape is changed.

But these summer cloudbursts are not a total loss despite the havoc they sometimes create in the affairs of men. Each flood-swept canyon becomes a new and virgin field for the prospector and gem and rock collector. Desert trees and shrubs put on new coats of green and many species of flowers sprout from the sand to add a brighter hue to the landscape. The desert is swept clean—so when you and I make our pilgrimages to the canyons and dunes during the fall and winter months we will enjoy all the thrill of a first exploration.

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THE GHOST TOWN

- continued from page 2 -

the Yellow Aster through his friend, the superintendent.

In 1930, Randsburg was about 34 years of age and about nine-tenths ghost town. A few optimistic diehards worked in a few worked-out mines, aside from the Aster.

And so the mine boss led us into the dark tunnel. A hundred yards or more and we came to a sizable room and a flickering light. Here were two grime-covered leasers, scratching gray material from cracks in the walls. Would we like to see a panning of the ore? About a pint of the dirt was put into a washing pan, and the man worked it down in practiced manner. No need for a magnifying glass here. In the bottom of the pan lay half-athimbleful of yellow grains. At a rough guess, \$2000 per ton! This was something for my Eastern friends to see.

The miners seemed to relish our visit and were glad to relax. The talk drifted to the usual "where you from" pattern. And so what?—one of the gold diggers had come from Cornell, New York, where Bill Backer had gone to college!

This resulted in Bill being presented with the gold from the pan, which he took home in a little medicine bottle. At last, gold in the raw! And in appreciation, the miner would be Bill's guest in one of his hotels should that hard-working man ever come back to New York. Bill Backer was that kind. He passed on, four years later.

I have doubled-back in years to try to paint a word picture of the place which furnished the material for "The Ghost Town" painting. In 1944 my friend, Dean Cornwell, the noted illustrator and mural painter of New York, came to work for a few months in my studio. He liked the mining series—and one day I brought out another 38 x 48 inch panel, prepared for some as yet unknown work, and sat looking at it hoping for an idea. "The Mining Town" was on a spare easel.

A logical thought asserted itself now. The series, the saga, was not complete. There must be a painting of that same mining town in its ghostly end: dead, deserted, dismal.

There comes the time when the mines are exhausted of paying ore. The miners know this; they are laid off and move away. The store and saloon keepers lose their customers and they too move away. Slowly the town dies. A few hopeful souls remain, held by faith. One day they too depart. Owls and bats take up abode in deserted buildings; coyotes and rabbits roam the streets unmolested. Only the memories remain. It is a ghost town.

This, then, is how "The Ghost Town" came to be done. It is my sincere hope that my paintings and the story of them will give you a small part of the enjoyment I had in doing them.

After all, they were painted more for you than for me.

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DEAR FRIENDS OF DESERT MAGAZINE:

This note is to remind you that beautiful lithographed reprints of the four Clyde Forsythe *GOLD STRIKE" paintings are still available by mail for only

These paintings have appeared on our covers; \$2.85 per set (postpaid). the concluding panel -"The Ghost Town" -- is featured

this month (see page 2 for more details). These are reproductions of the finest quality-14x17" (plus a 2-inch white margin) in size--with NO

LETTERING or FOLDS. The story behind each episode, as told by the artist, appears on the reverse-side of

I'm sure you will be proud to hang these pictures on your walls -- or to give them to friends as gifts. You can order one or more sets by mail from Reprint Department, the paintings. Charles E. Sheeto Desert Magazine, Palm Desert, Calif.

Charles E. Shelton

publisher

